

Application No.: 10/519,510  
Applicant(s) : Stephan Hase  
Title : Method and Simulation System  
for Simulating Order Processing  
Processes...  
Attorney Docket: 101215-175

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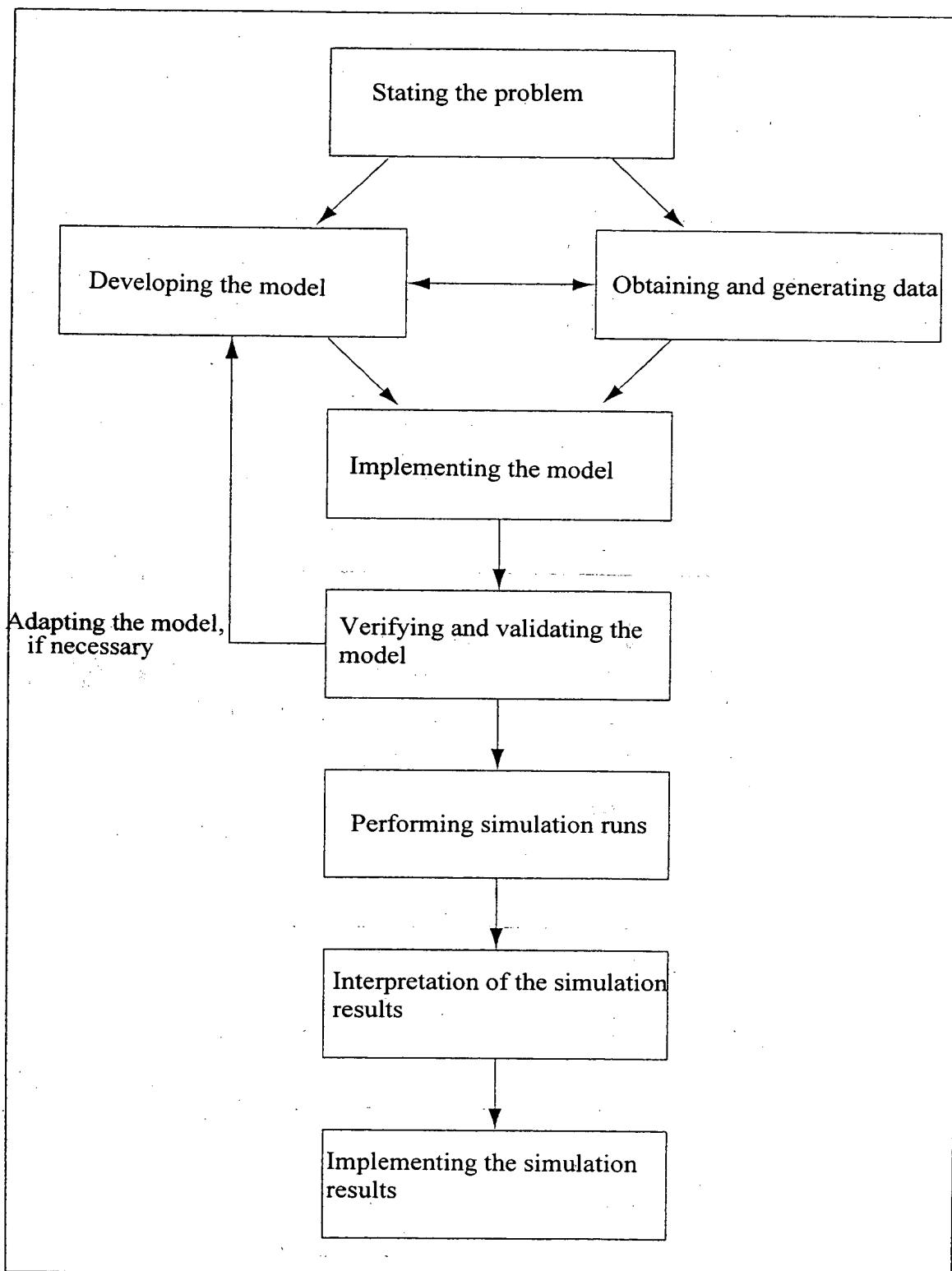


FIG. 1

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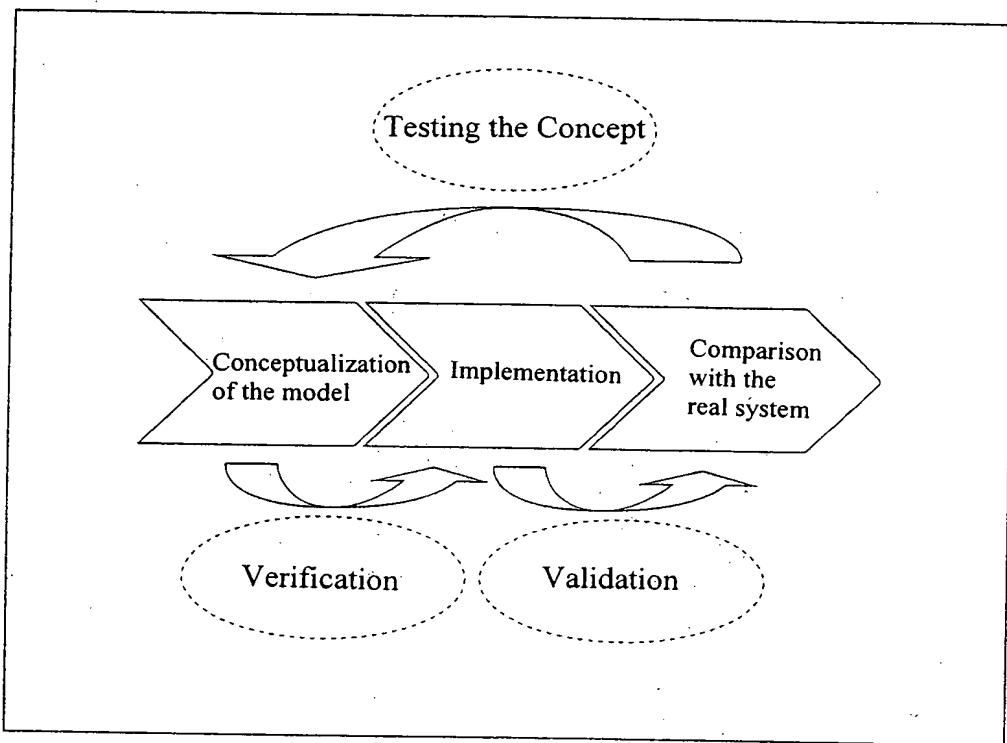


FIG. 2

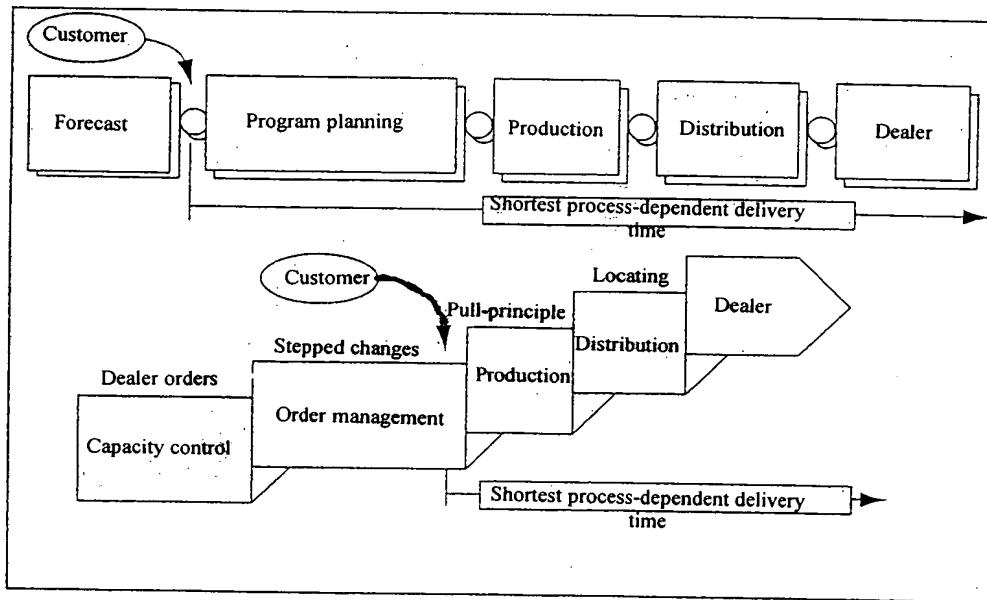


FIG. 3

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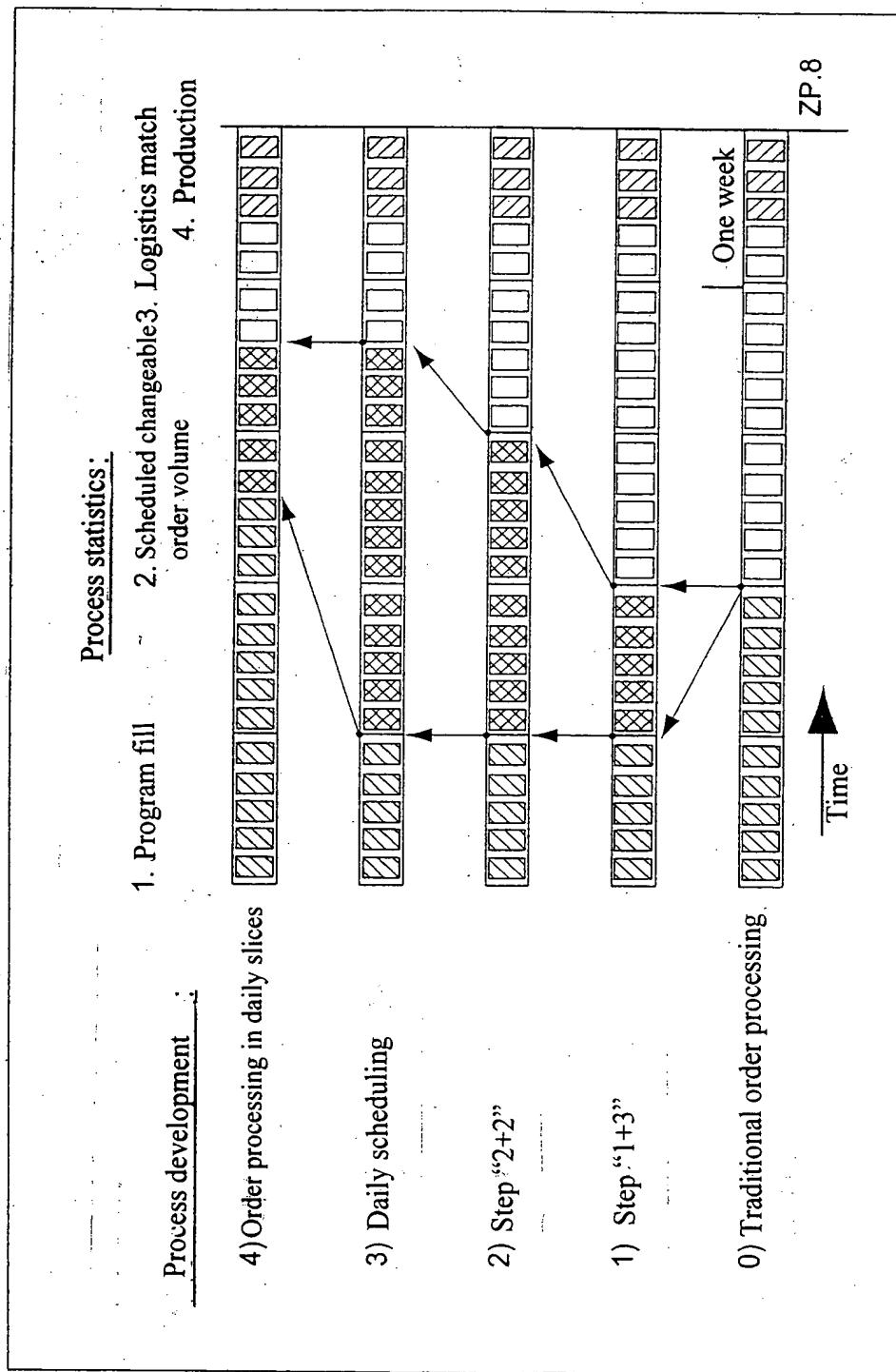


FIG. 4

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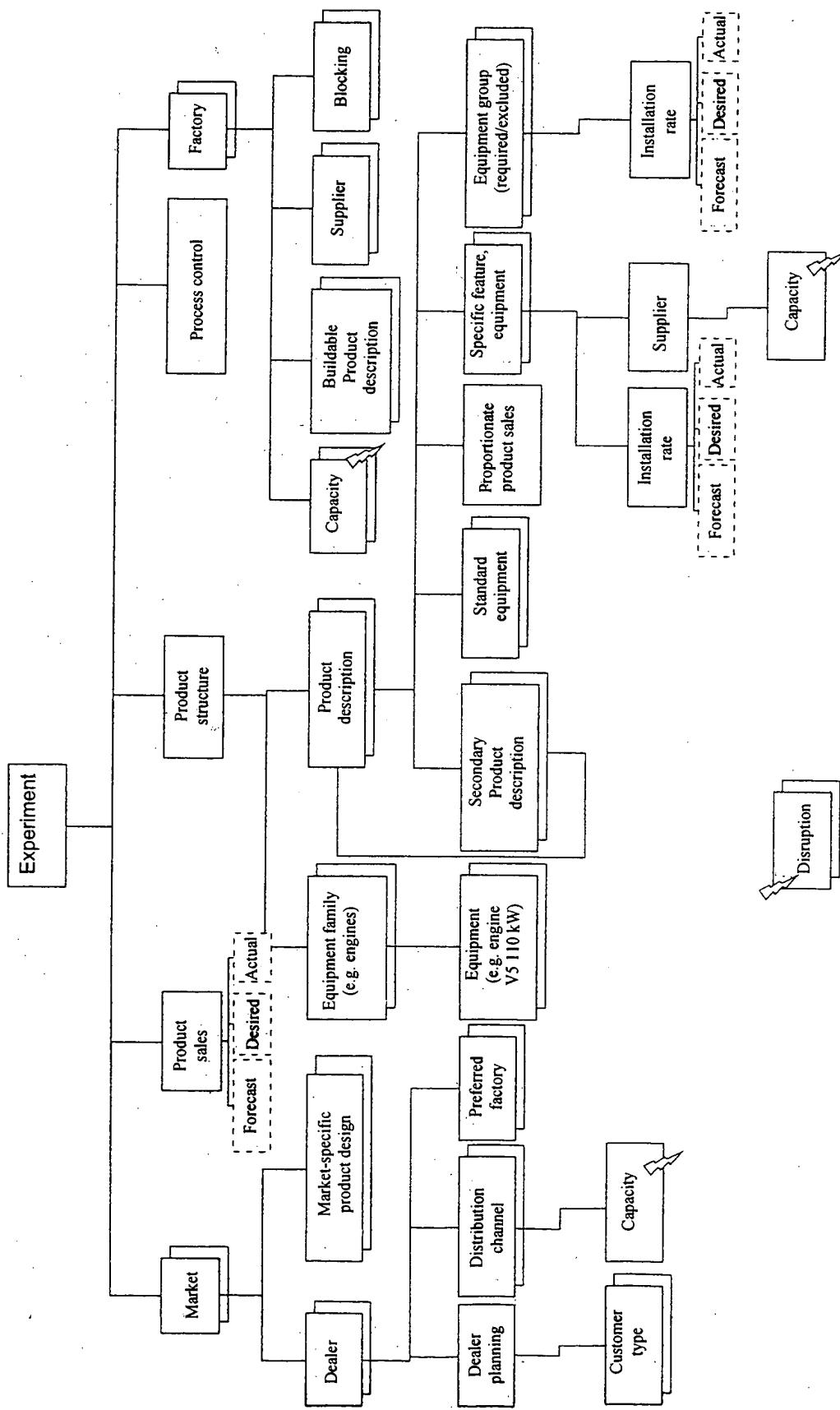


FIG. 5

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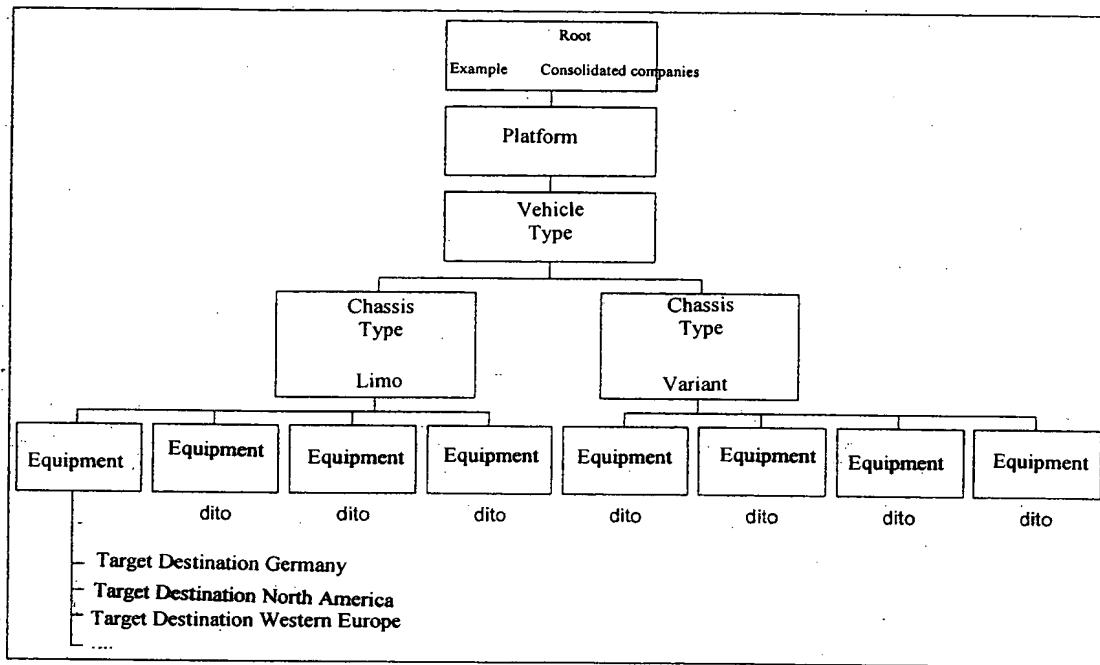


FIG. 6

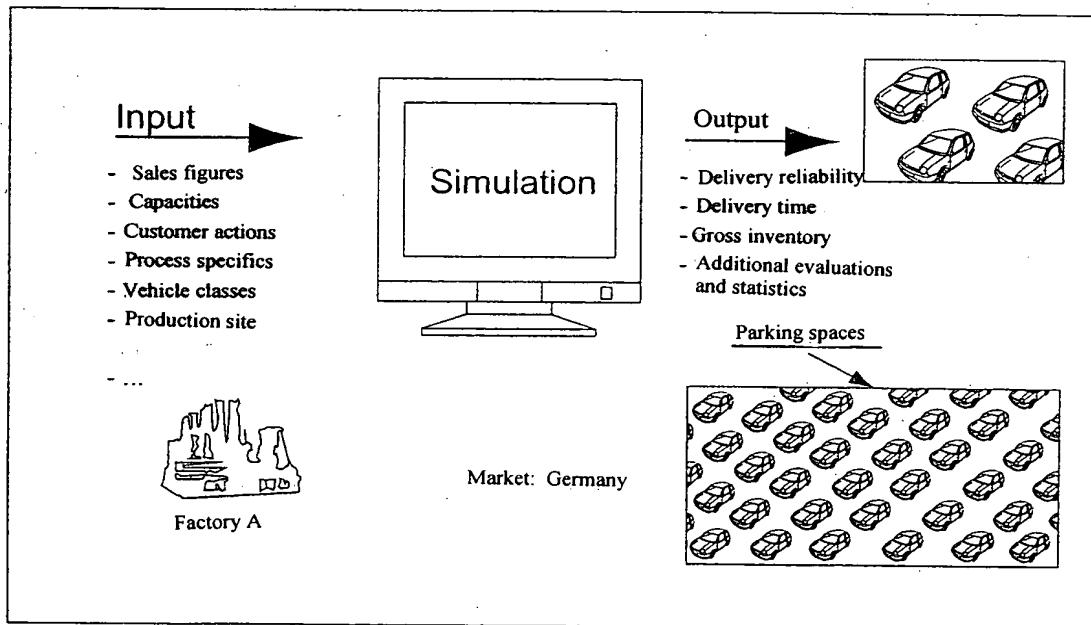


FIG. 7

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Vehicle Type X		Vehicle Type Y	
Interval (Production time in hours)	Fraction	Interval (Production time in hours)	Fraction
0-70	0%	0-48	0%
70-74	10%	48-50	10%
74-75	40%	50-60	40%
75-116	40%	60-91	40%
116-352	10%	91-149	10%

FIG. 8

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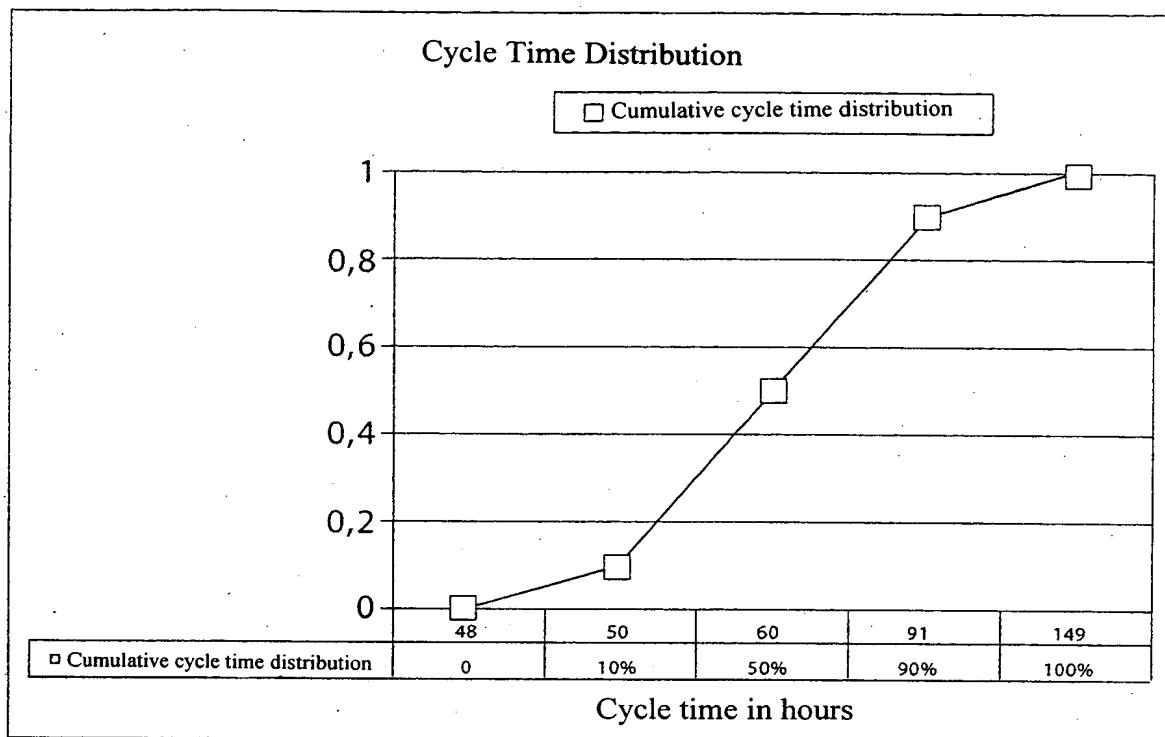


FIG. 9

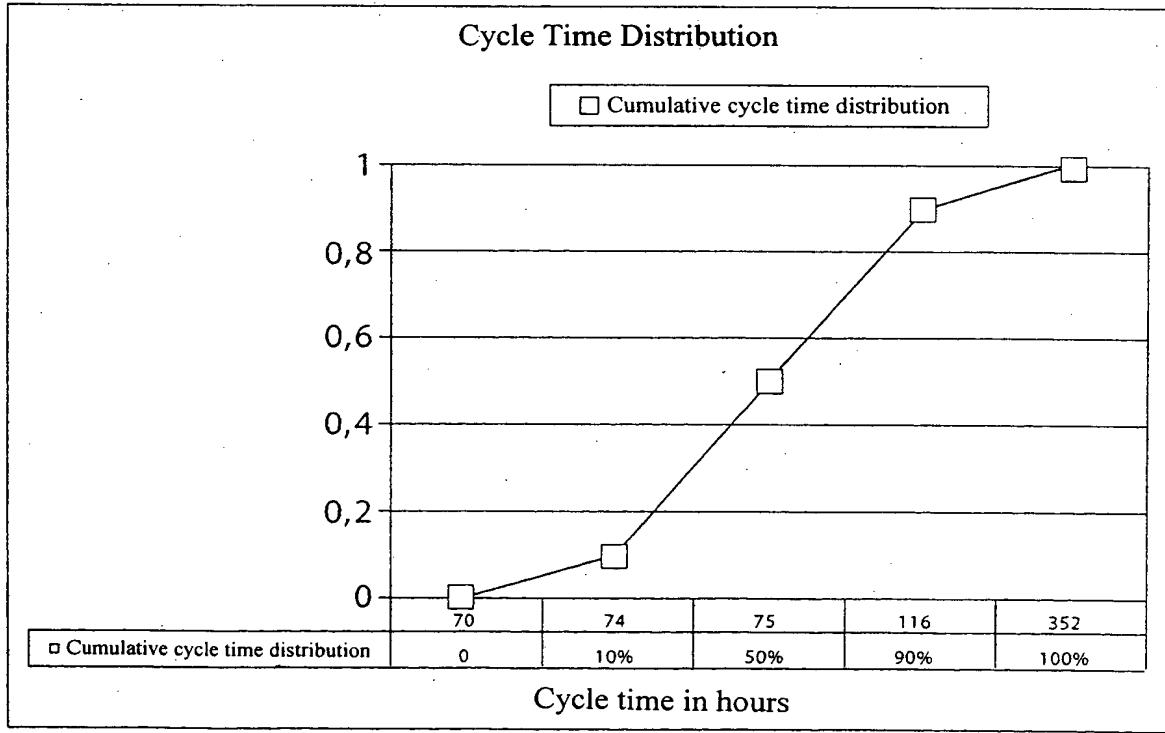


FIG. 10

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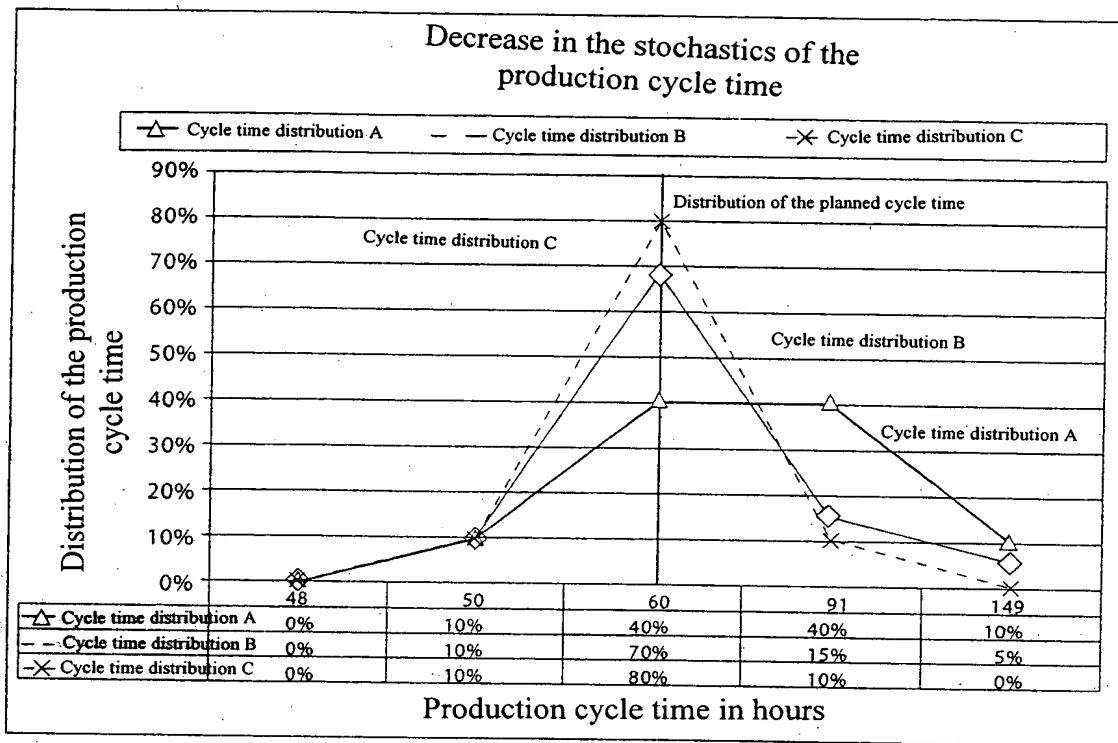


FIG. 11

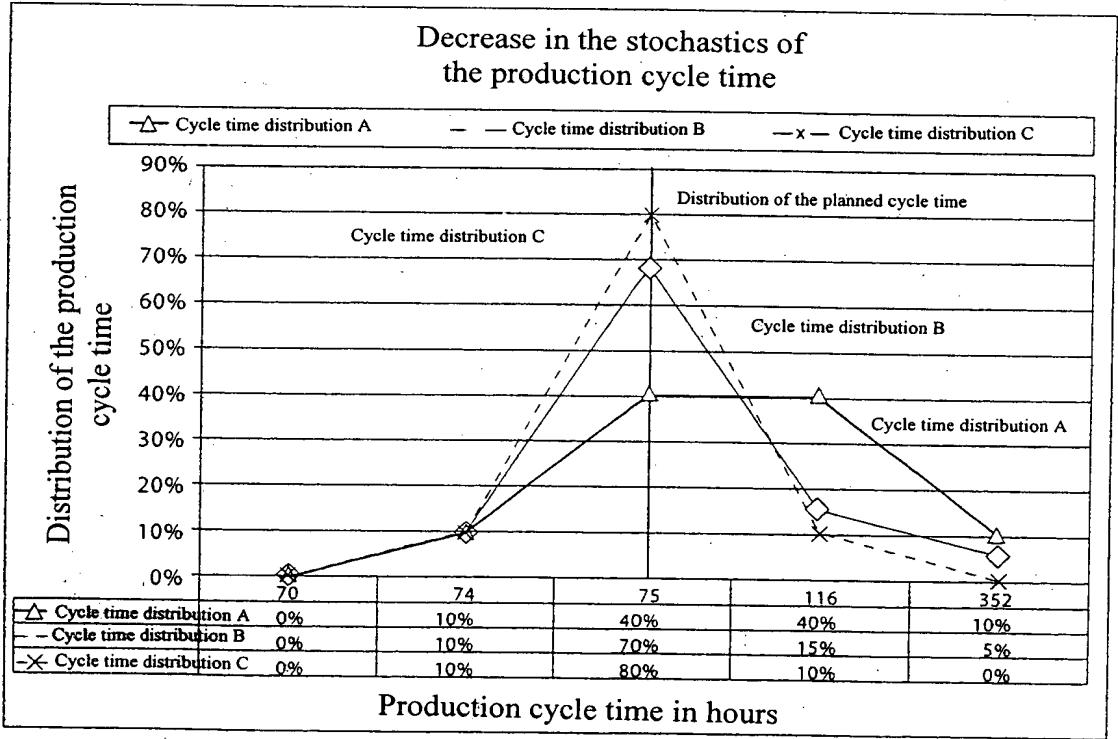


FIG. 12

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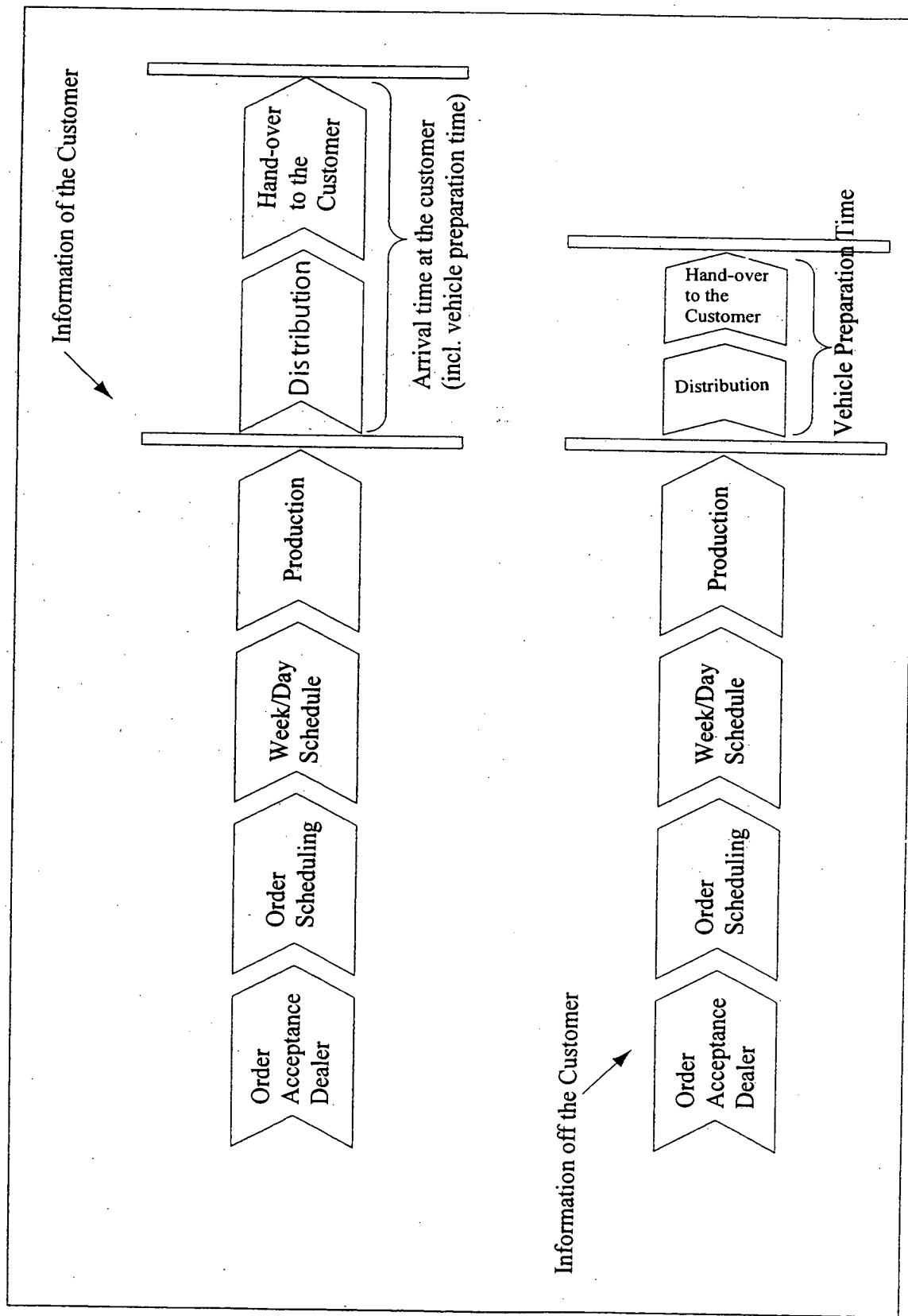


FIG. 13

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Parking space requirements for vehicle delivery via a delivery point of the manufacturer(s) (Scenario A; Distribution of the production cycle time A)	Parking space requirements for vehicles to be delivered via a delivery point of the manufacturer(s) and produced in the factory						
Configuration step 1: Delivery of 300 vehicles/day	<table> <tr> <td>Max.</td><td>6.216</td></tr> <tr> <td>Average</td><td>4.847</td></tr> <tr> <td>Min.</td><td>3.880</td></tr> </table>	Max.	6.216	Average	4.847	Min.	3.880
Max.	6.216						
Average	4.847						
Min.	3.880						
Configuration Step 2: Delivery of 600 vehicles/day	<table> <tr> <td>Max.</td><td>12.121</td></tr> <tr> <td>Average</td><td>9.620</td></tr> <tr> <td>Min.</td><td>7.556</td></tr> </table>	Max.	12.121	Average	9.620	Min.	7.556
Max.	12.121						
Average	9.620						
Min.	7.556						
Configuration step 3: Delivery of 1000 vehicles/day	<table> <tr> <td>Max.</td><td>19.130</td></tr> <tr> <td>Average</td><td>15.389</td></tr> <tr> <td>Min.</td><td>12.070</td></tr> </table>	Max.	19.130	Average	15.389	Min.	12.070
Max.	19.130						
Average	15.389						
Min.	12.070						

FIG. 14

Cycle time distribution in production	Standard Deviation Vehicle Type X	Standard deviation Vehicle Type Y	ZP8 reliability (total) per week	ZP8 reliability (total) per week incl. estimate
Distribution A	60,0 h	22,5 h	68%	76%
Distribution B	38,0 h	16,0 h	72%	83%
Distribution C	7,3 h	7,5 h	75%	88%

FIG. 15

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Parking space requirements for vehicle delivery via a delivery point of the manufacturer(s) (Scenario B; Distribution of the production cycle time C)	Parking space requirements for vehicles to be delivered via a delivery point of the manufacturer(s) and produced in the factory
Configuration step 1: Delivery of 300 vehicles/day	Max. 1.360 Average 1.061 Min. 789
Configuration step 2: Delivery of 600 vehicles/day	Max. 2.551 Average 2.026 Min. 1.277
Configuration step 3: Delivery of 1000 vehicles/day	Max. 3.940 Average 3.203 Min. 1.570

FIG. 16

Parking space requirements for vehicle delivery via a delivery point of the manufacturer(s) when changing from Scenario A to Scenario B	Parking space requirements for vehicles to be delivered via a delivery point of the manufacturer(s) and produced in the factory
Configuration step 1: Delivery of 300 vehicles/day	Max. 4.856 Average 3.831 Min. 3.091
Configuration step 2: Delivery of 600 vehicles/day	Max. 9.570 Average 7.594 Min. 3.880
Configuration step 3: Delivery of 1000 vehicles/day	Max. 15.190 Average 12.186 Min. 10.500

FIG. 17

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Configuration steps of vehicle delivery via a delivery point of the manufacturer(s)	Reduction of the average parking space requirement when substituting Scenario A; Production cycle time distribution A by Scenario B; Production cycle time distribution C (vehicles manufactured in factory A)	Cost savings in committed capital demonstrated by the simulation
Configuration step 1: Delivery of 300 vehicles/day	3.831	9,8 Mio €
Configuration step 2: Delivery of 600 vehicles/day	7.594	19,4 Mio €
Configuration step 3: Delivery of 1000 vehicles/day	15.389	39,2 Mio €

FIG. 18

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Configuration steps of vehicle delivery via a delivery point of the manufacturer(s)	Reduction of the average shipping time when substituting Scenario A; Production cycle time distribution A by Scenario B; Production cycle time distribution C	Cost savings in committed capital demonstrated by the simulation
Configuration step 1: Delivery of 300 vehicles/day	10.08 per day	72,4 Mio €
Configuration step 2: Delivery of 600 vehicles/day	10.51 per day	74,4 Mio €
Configuration step 3: Delivery of 1000 vehicles/day	10.91 per day	77,2 Mio €

FIG. 19

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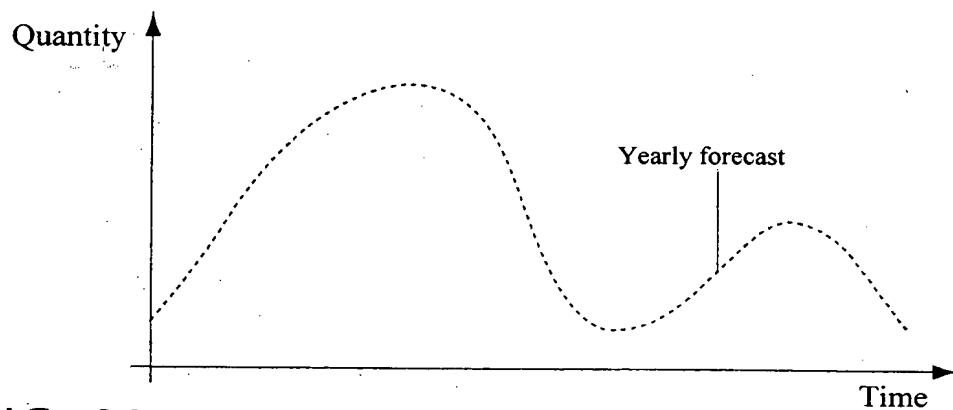


FIG. 20

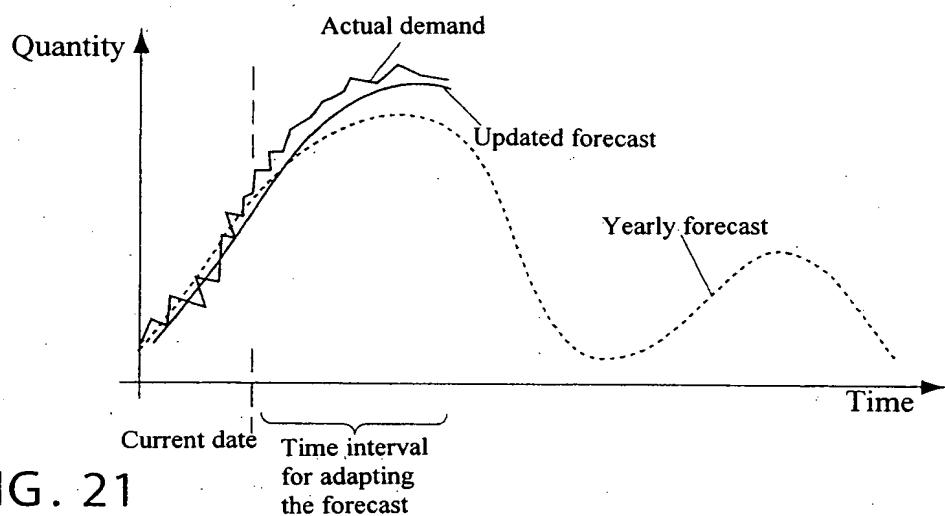


FIG. 21

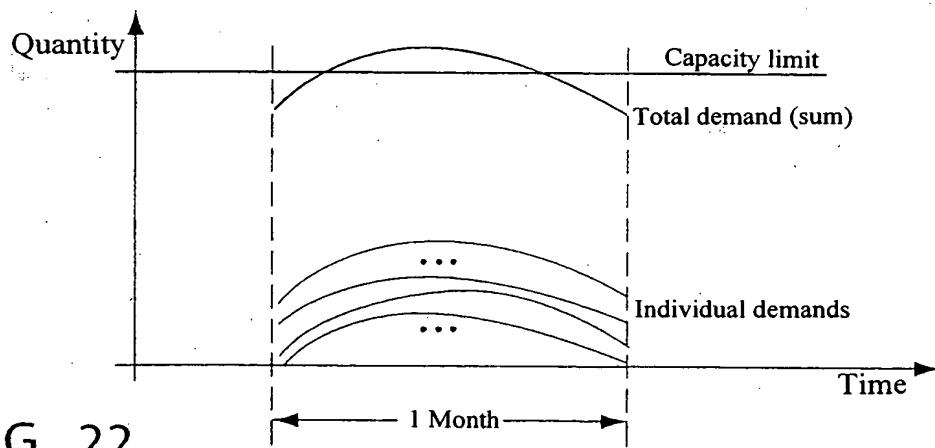


FIG. 22

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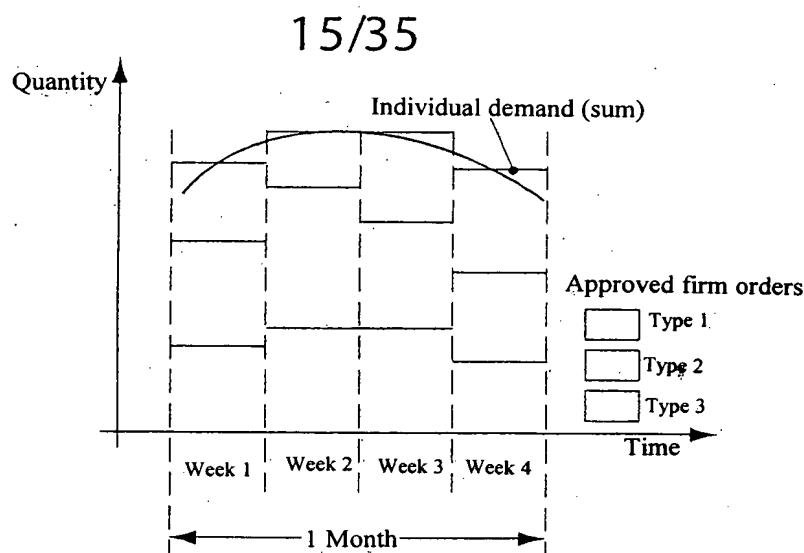


FIG. 23

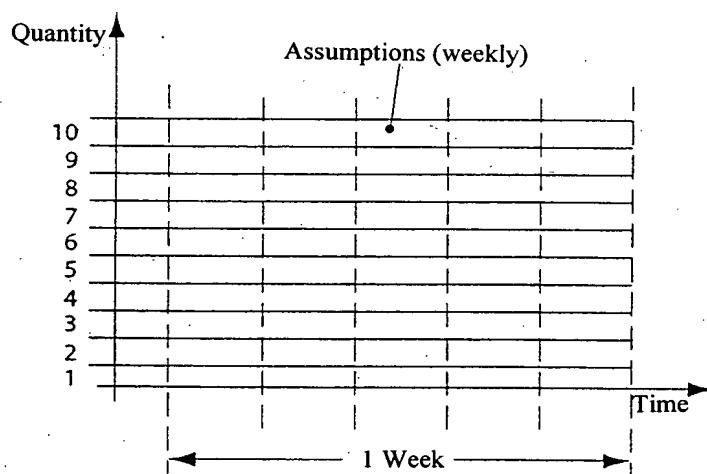


FIG. 24

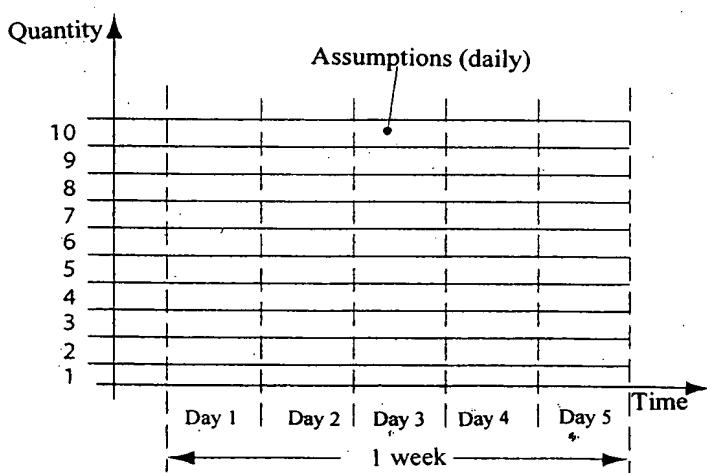


FIG. 25

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USA		Canada	
Name	Market Share	Name	Market Share
Brunswick	24 %	Toronto	26,4 %
Wilmington	13 %	Montreal	49,4 %
Boston	26 %	Vancouver	24,2 %
San Diego	20 %		
Houston	17 %		

FIG. 26a

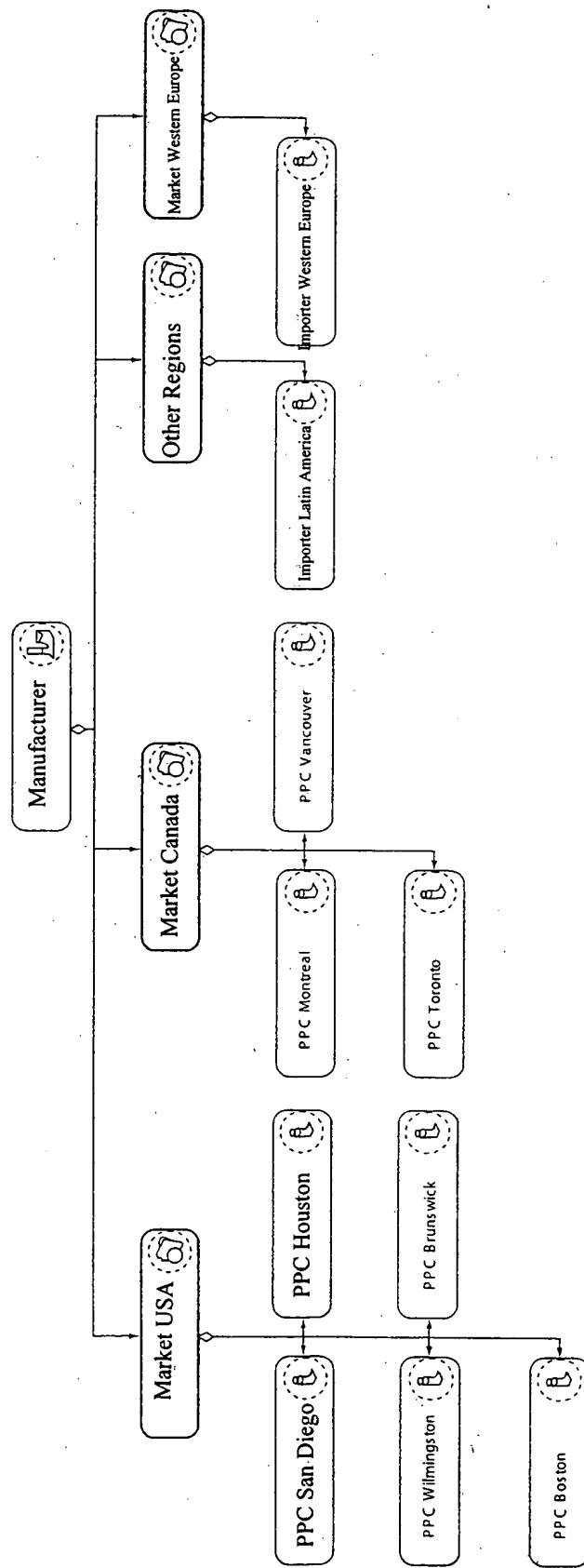


FIG. 26b

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Engines	Transmission	Climate Control	
1,4 l 55 kW	MN7	4-speed automatic transmission	Heater with mechanical Control 9AA
1,6 l 75 kW	MN7	5-speed manual transmission	GOC Manual climate control 9A0
1,6 l 75 kW			
1,9 l			
2,0 l 85 kW	MR 4		

FIG. 27a

Radios	Colors	Top
Radio Alpha	8AB Alaska Green	V7V7 Manual Top 3FM
Radio Gamma	8A0 Tan	Electrical Top 3FT
No radio	8AA Black	A1A1
	Campanella White	R6R6
	Clementine 2	T1T1
	Cybergreen metallic	L9L9
	Light Gray Solid 2	
Red		P2P2
Reflecting Silver Metallic		8E8E
Royal Navy		7W7W
Speed Blue		V8V8
Yukon Yellow		

FIG. 27b

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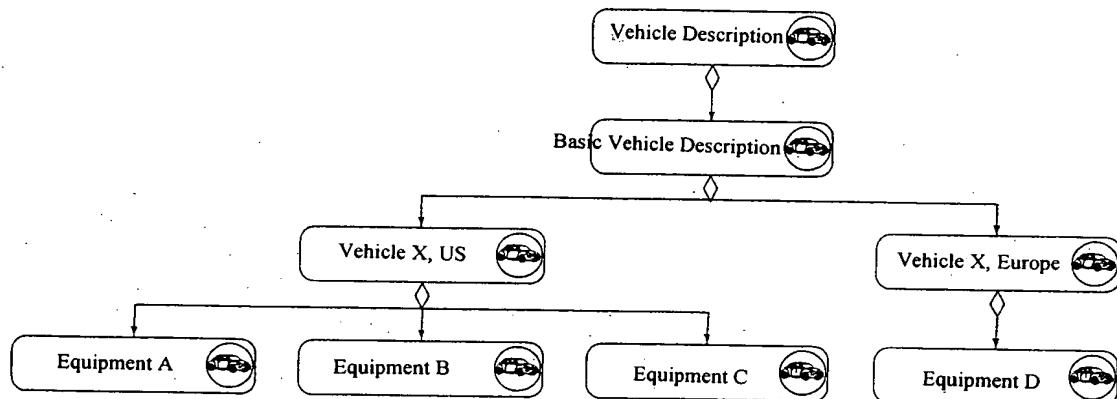


FIG. 28

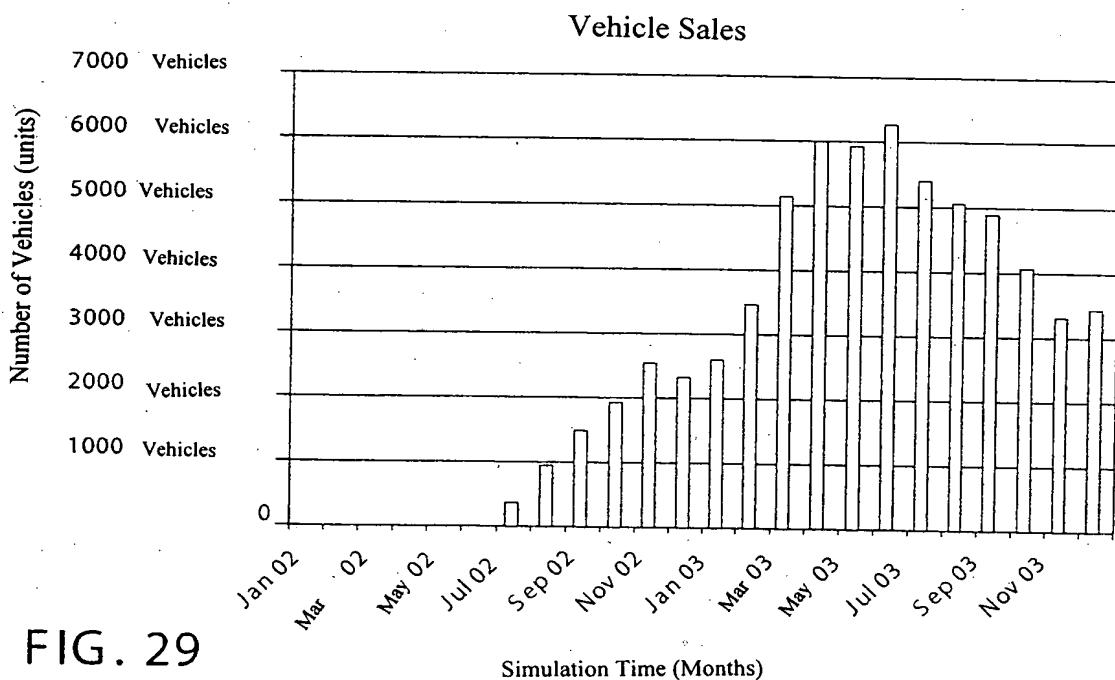


FIG. 29

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Vehicle Sales		
Jan 01	0	
Feb 01	0	
Mar 01	0	
Apr 01	0	
May 01	0	
Jun 01	10	Vehicle(s)
Jul 01	335	Vehicle(s)
Aug 01	915	Vehicle(s)
Sep 01	1470	Vehicle(s)
Oct 01	1922	Vehicle(s)
Nov 01	2553	Vehicle(s)
Dec 01	2325	Vehicle(s)
Jan 01	2609	Vehicle(s)
Feb 01	3487	Vehicle(s)
Mar 01	5169	Vehicle(s)

Apr 02	6004	Vehicle(s)
May 02	5952	Vehicle(s)
Jun 02	6271	Vehicle(s)
Jul 02	5414	Vehicle(s)
Aug 02	5084	Vehicle(s)
Sep 02	4915	Vehicle(s)
Oct 02	4093	Vehicle(s)
Nov 02	3328	Vehicle(s)
Dec 02	3459	Vehicle(s)

FIG. 30

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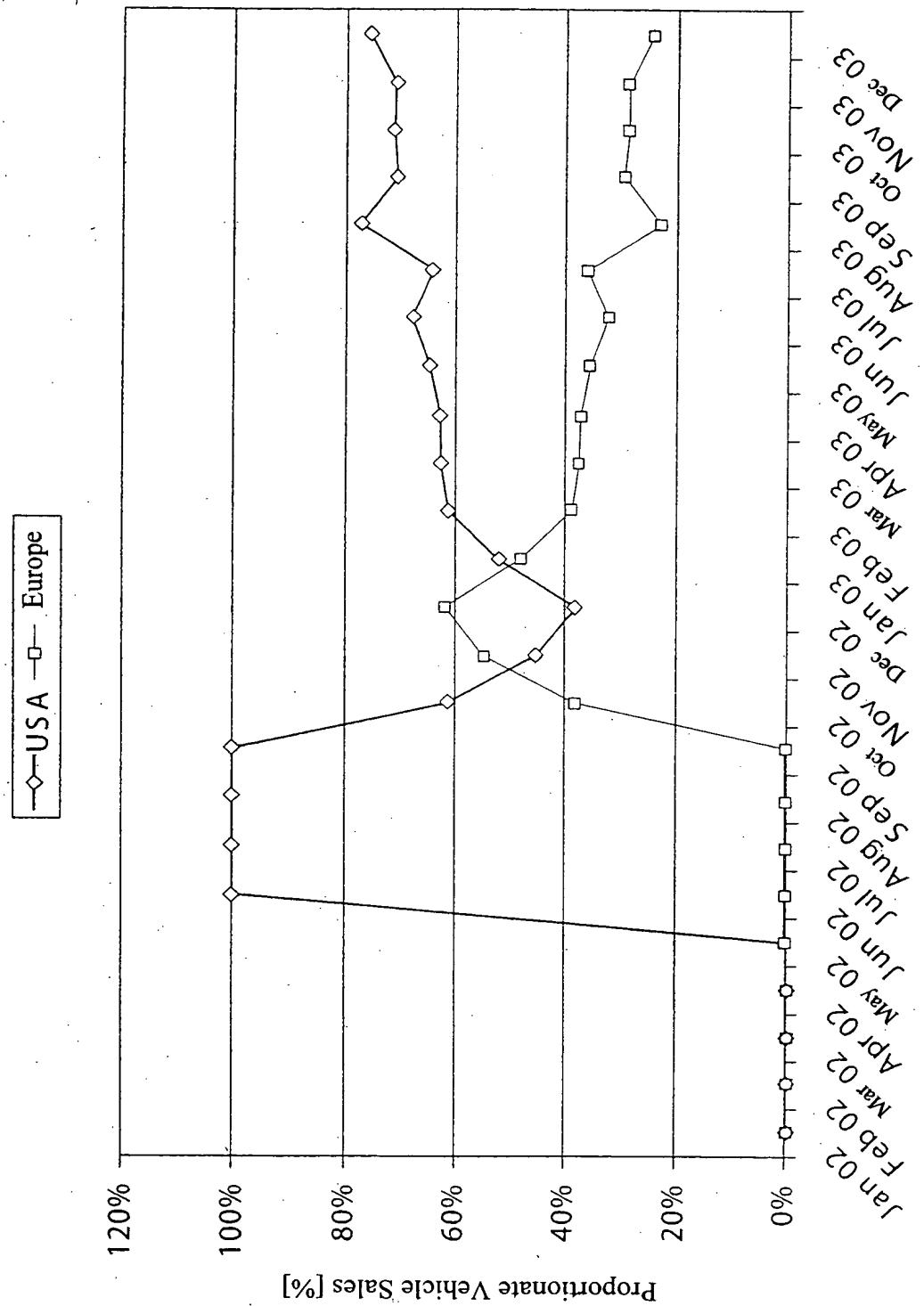


FIG. 31a

Simulation Time (Months)

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	<b>USA</b>	<b>Europe</b>
Jan 01	0,00%	0,00%
Feb 01	0,00%	0,00%
Mar 01	0,00%	0,00%
Apr 01	0,00%	0,00%
May 01	0,00%	0,00%

Jun 01	100,00%	0,00%
Jul 01	100,00%	0,00%
Aug 01	100,00%	0,00%
Sep 01	100,00%	0,00%
Oct 01	61,55%	38,45%
Nov 01	45,36%	54,64%
Dec 01	38,24%	61,76%
Jan 02	52,01%	47,99%
Feb 02	61,28%	38,72%
Mar 02	62,55%	37,45%
Apr 02	62,69%	37,31%
May 02	64,38%	35,62%
Jun 02	67,79%	32,21%
Jul 02	63,87%	36,13%
Aug 02	77,34%	22,66%
Sep 02	70,56%	29,44%
Oct 02	71,27%	28,73%
Nov 02	71,24%	28,76%
Dec 02	75,51%	24,49%

FIG. 31b

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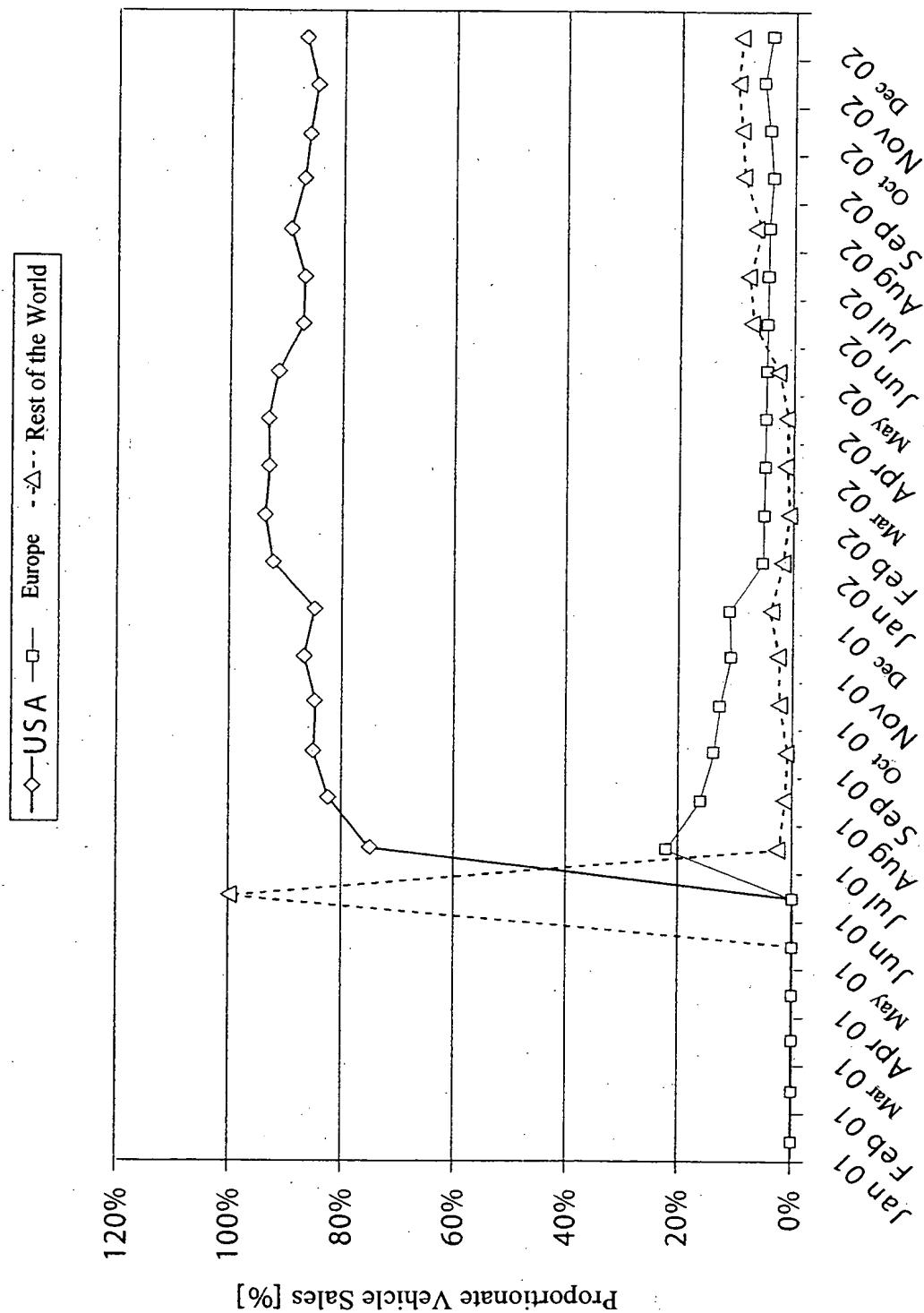


FIG. 32a

Simulation Time (Months)

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	USA	Europe	Rest of the World
Jan 01	0,00%	0,00%	0,00%
Feb 01	0,00%	0,00%	0,00%
Mar 01	0,00%	0,00%	0,00%
Apr 01	0,00%	0,00%	0,00%
May 01	0,00%	0,00%	0,00%
Jun 01	0,00%	0,00%	100,00%
Jul 01	74,63%	22,39%	2,99%
Aug 01	81,97%	16,39%	1,64%
Sep 01	85,03%	13,61%	1,36%
Oct 01	84,53%	12,68%	2,79%
Nov 01	86,36%	10,79%	2,85%
Dec 01	84,36%	11,25%	4,39%
Jan 02	92,11%	5,53%	2,36%
Feb 02	93,59%	5,38%	1,03%
Mar 02	92,79%	5,41%	1,79%
Apr 02	92,99%	5,31%	1,70%
May 02	91,34%	5,22%	3,44%
Jun 02	87,04%	5,29%	7,67%
Jul 02	86,76%	5,06%	8,18%
Aug 02	89,01%	5,09%	5,90%
Sep 02	86,51%	4,33%	9,17%
Oct 02	85,70%	4,80%	9,50%
Nov 02	84,35%	5,48%	10,16%
Dec 02	86,14%	4,40%	9,46%

FIG. 32b

Holidays					
01.Jan.2001 KW 1	05. May..2001 KW 18	20.Jul.2001 KW 29	24. Dec..2001 KW 52		
25. Mar..2001 KW 13	10. May..2001 KW 19	15.Sep.2001 KW 37	25. Dec..2001 KW 52		
26. Mar..2001 KW 13	11. May..2001 KW 19	16.Sep.2001 KW 37	26. Dec..2001 KW 52		
27. Mar..2001 KW 13	15.Jul.2001 KW 29	28.Sep.2001 KW 39	27. Dec..2001 KW 52		
28. Mar..2001 KW 13	05.Jul.2001 KW 29	01.Nov.2001 KW 44	28. Dec..2001 KW 52		
29. Mar..2001 KW 13	05.Jul.2001 KW 29	02.Nov.2001 KW 44	29. Dec..2001 KW 52		
30. Mar..2001 KW 13	05.Jul.2001 KW 29	12. Dec..2001 KW 50	30. Dec..2001 KW 52		
01..May..2001 KW 18	05.Jul.2001 KW 29	23.. Dec..2001 KW 51	31. Dec..2001 KW 53		

FIG. 33

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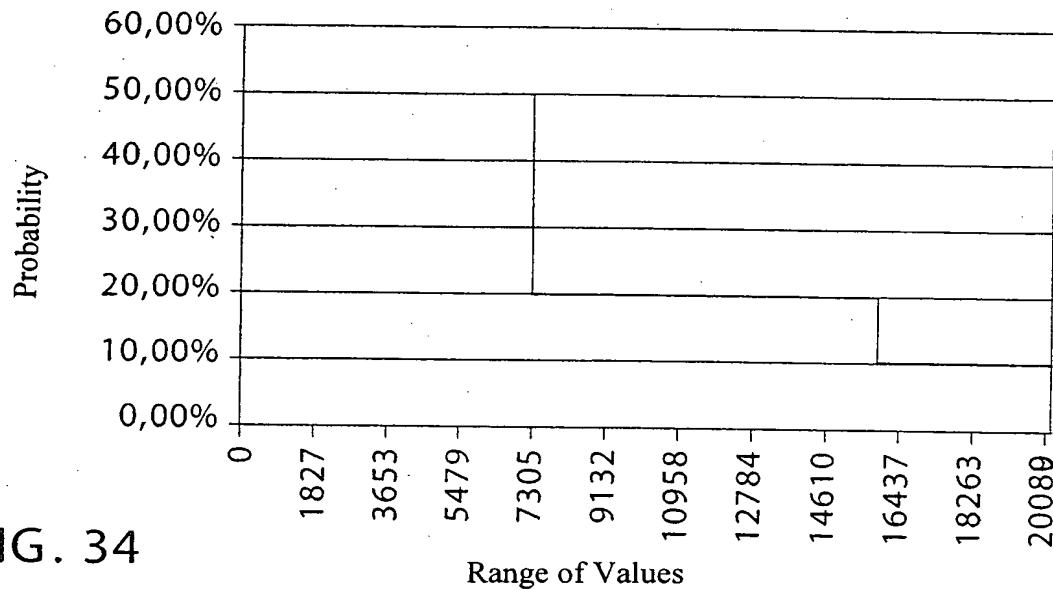


FIG. 34

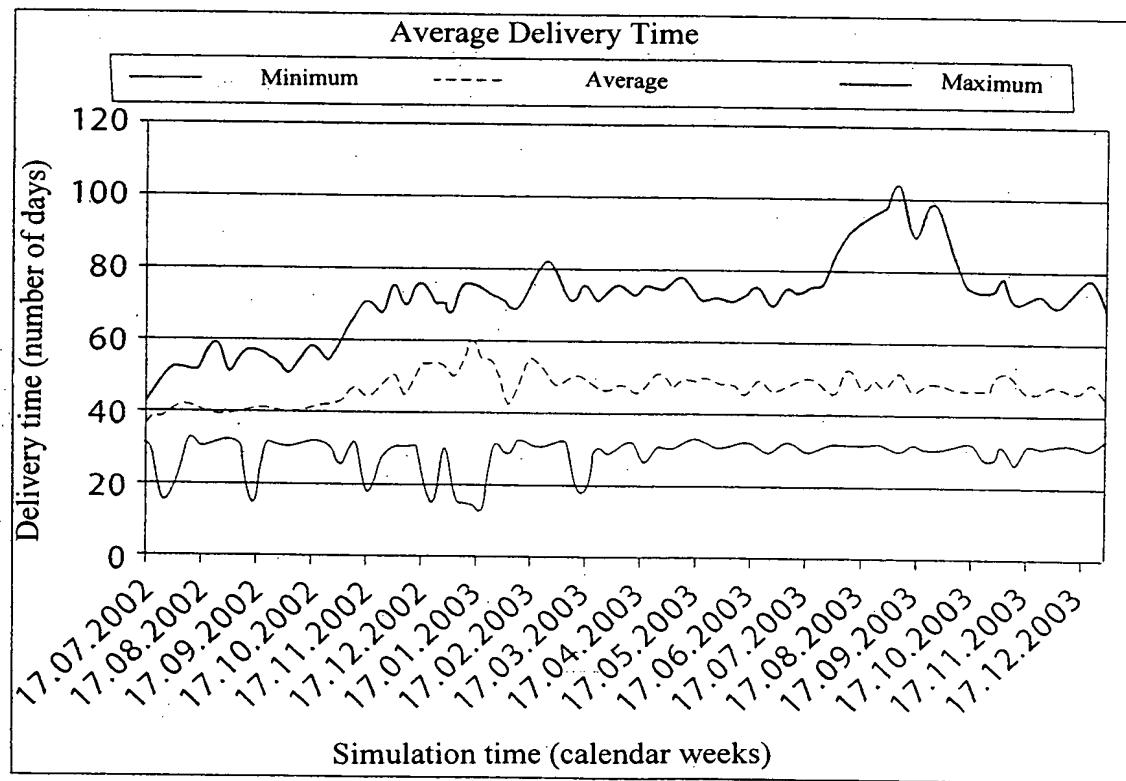


FIG. 35

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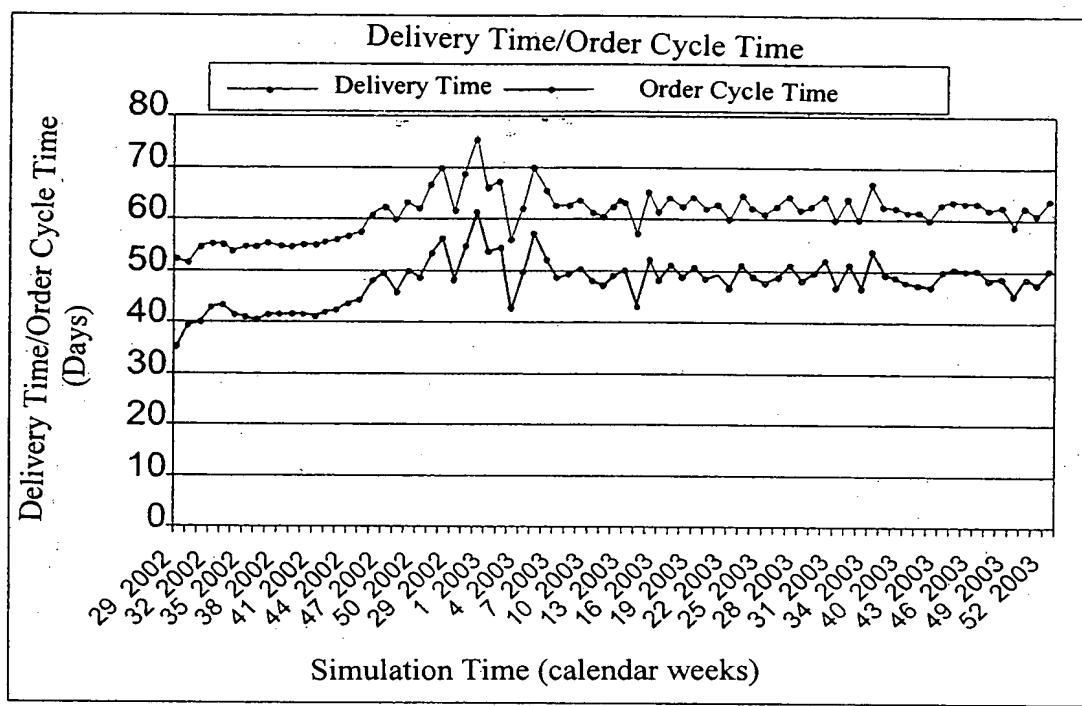


FIG. 36

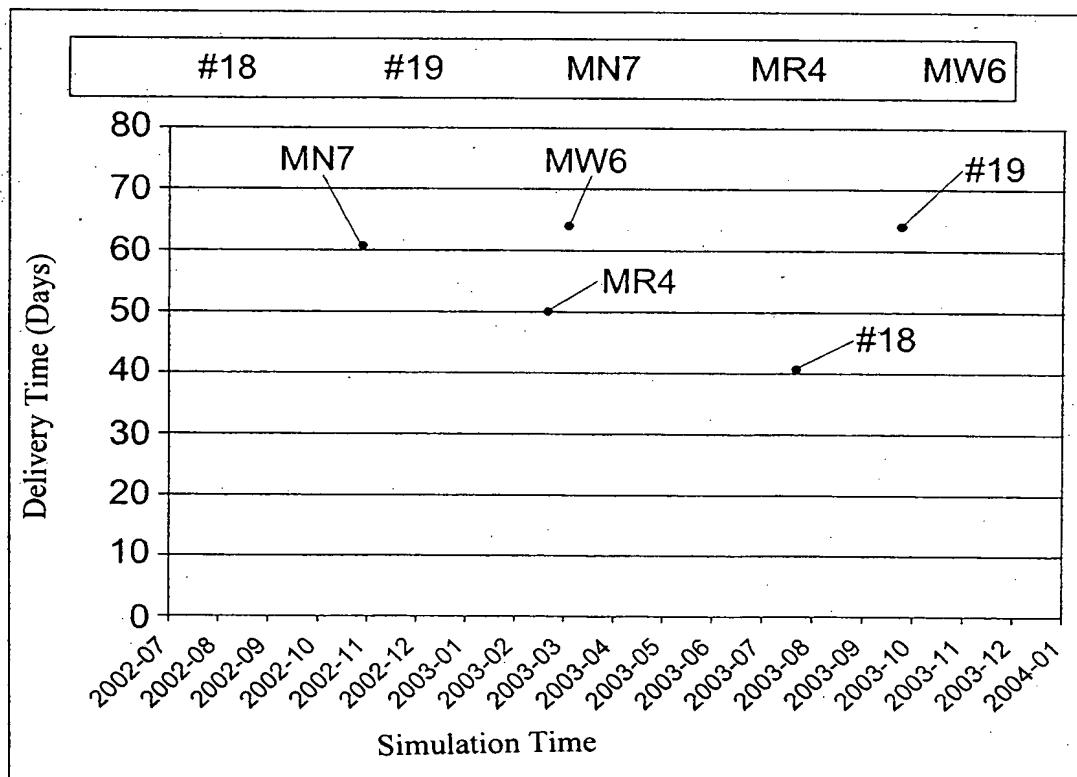


FIG. 37

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## Planning Reliability

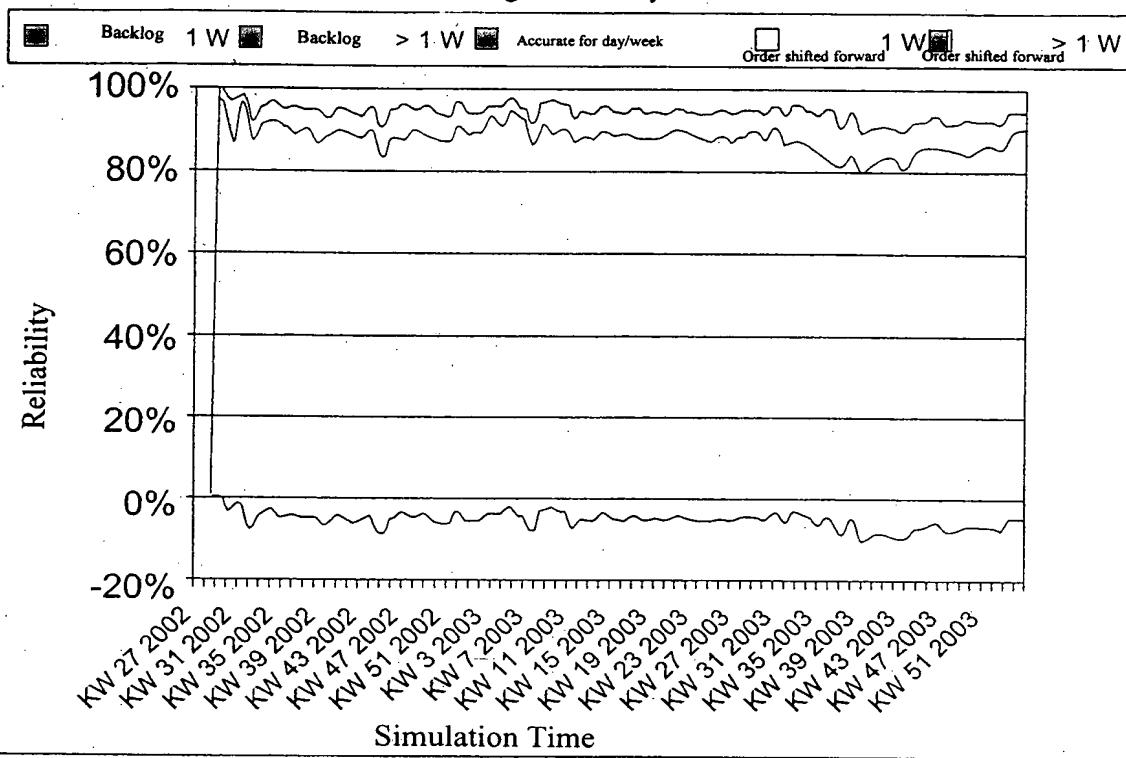


FIG. 38

## Weekly Planning Reliability

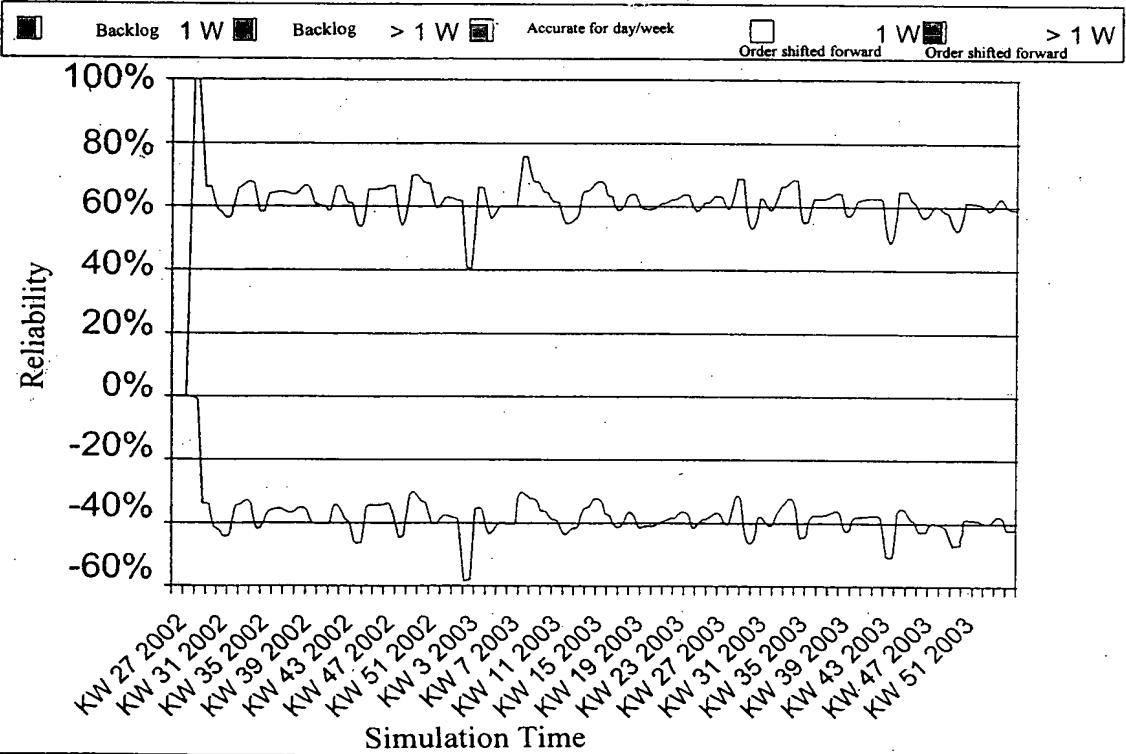


FIG. 39

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### ZP8 Reliability

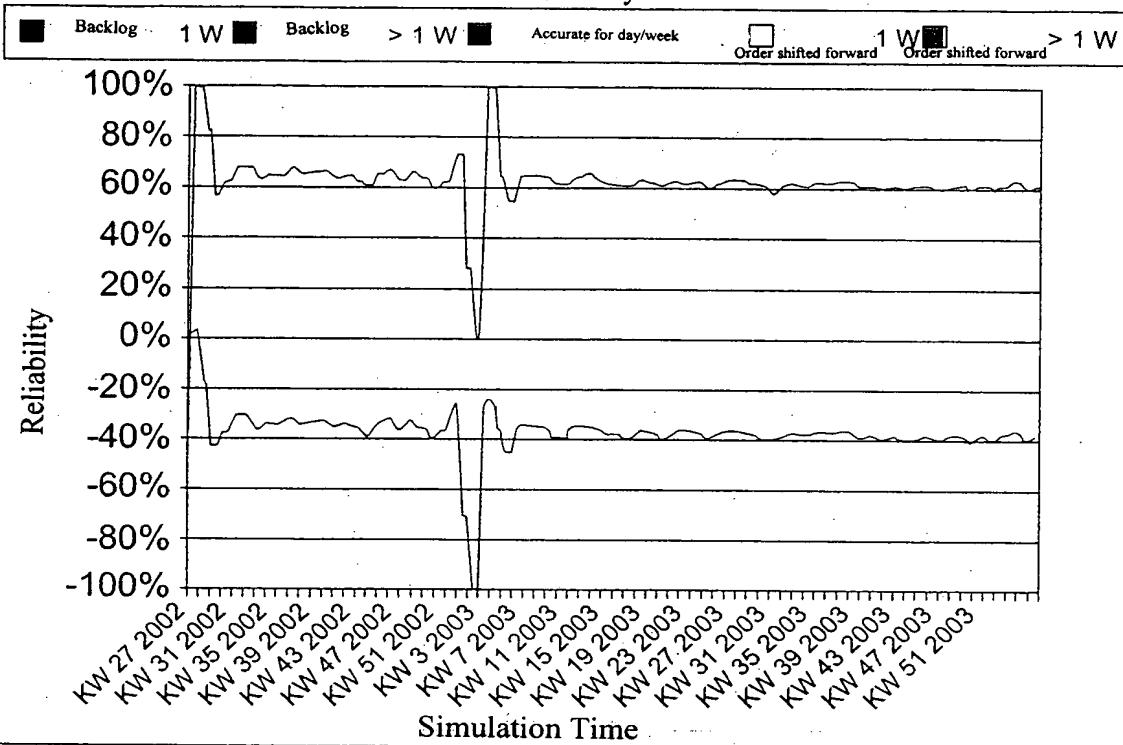


FIG. 40

### Delivery Reliability

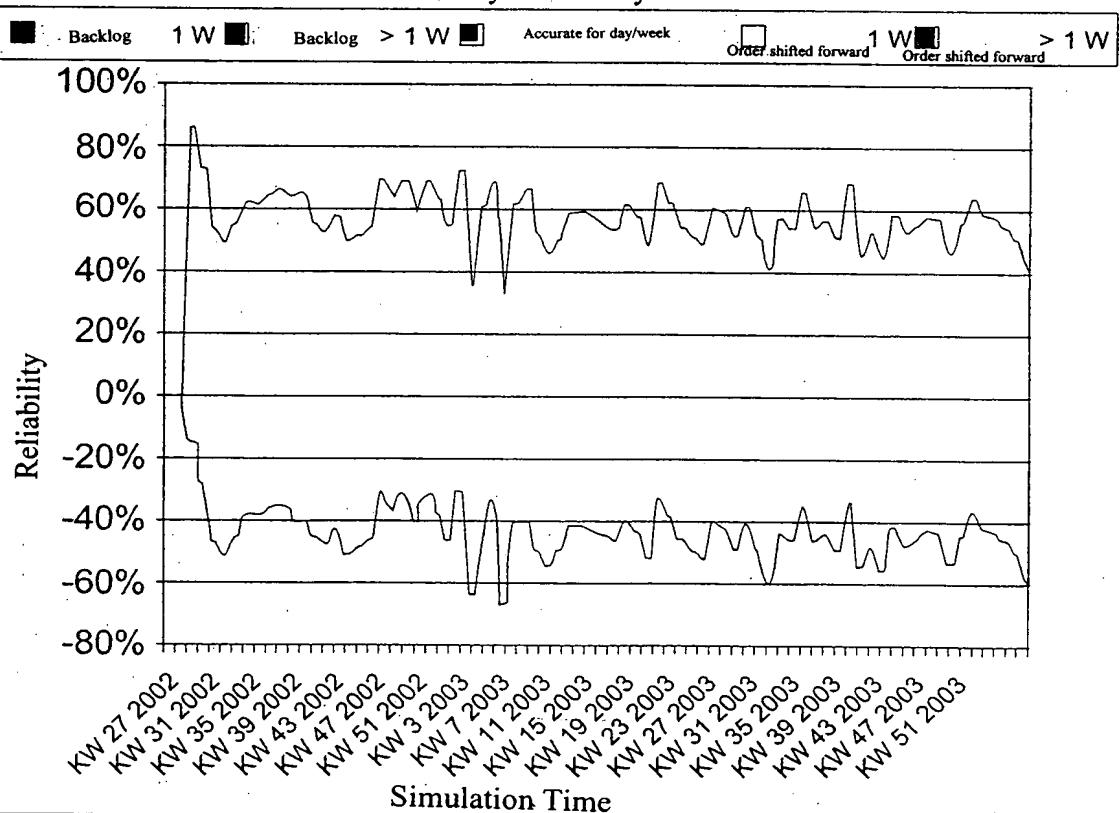


FIG. 41

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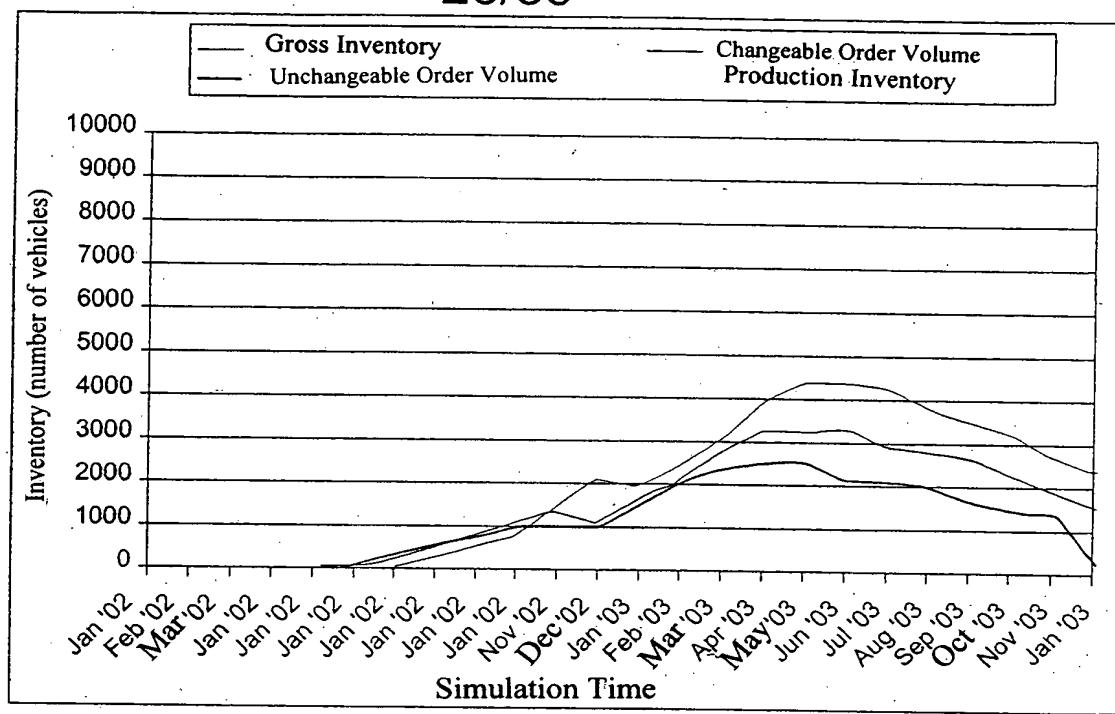


FIG. 42

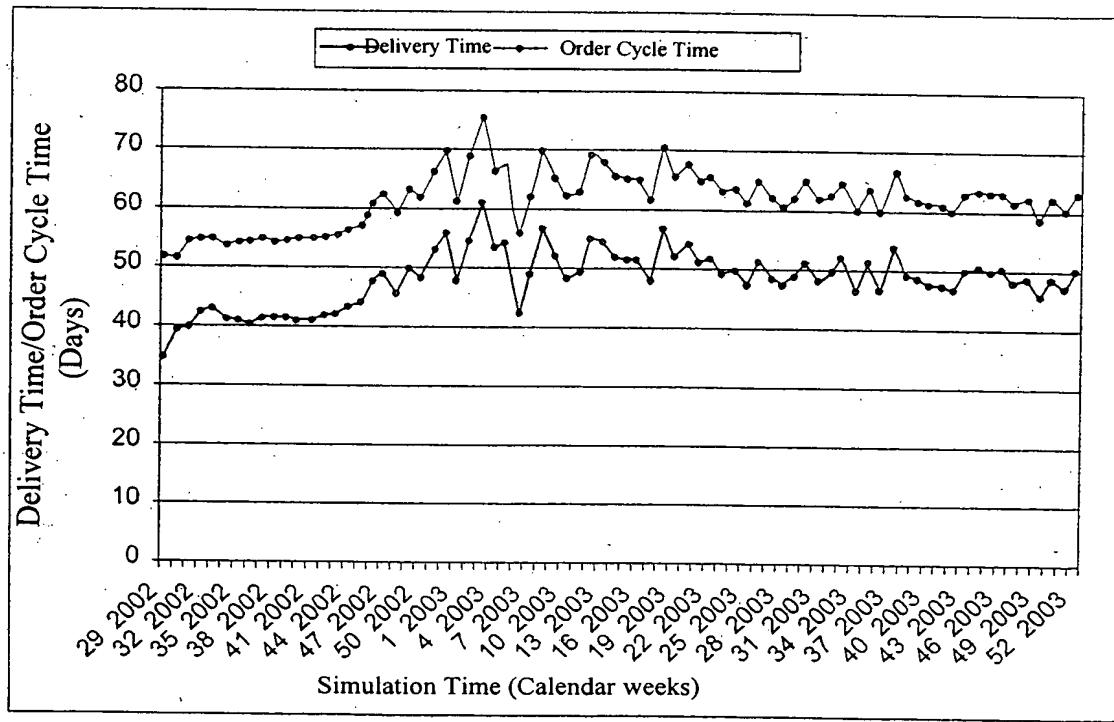


FIG. 43

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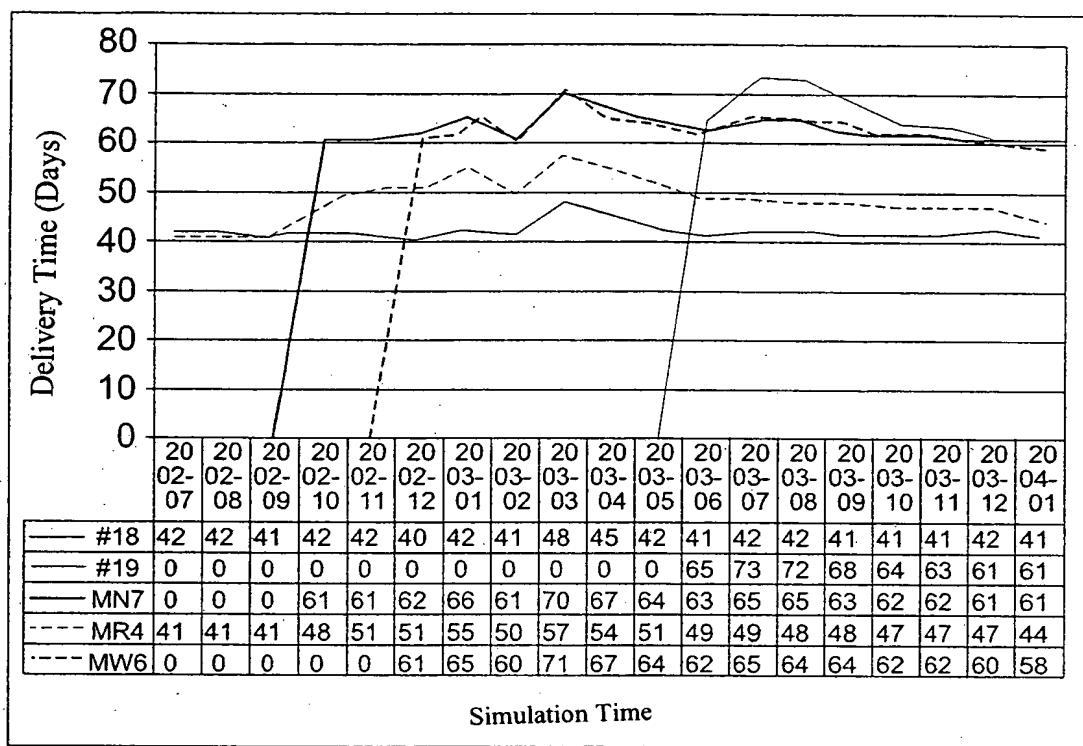


FIG. 44

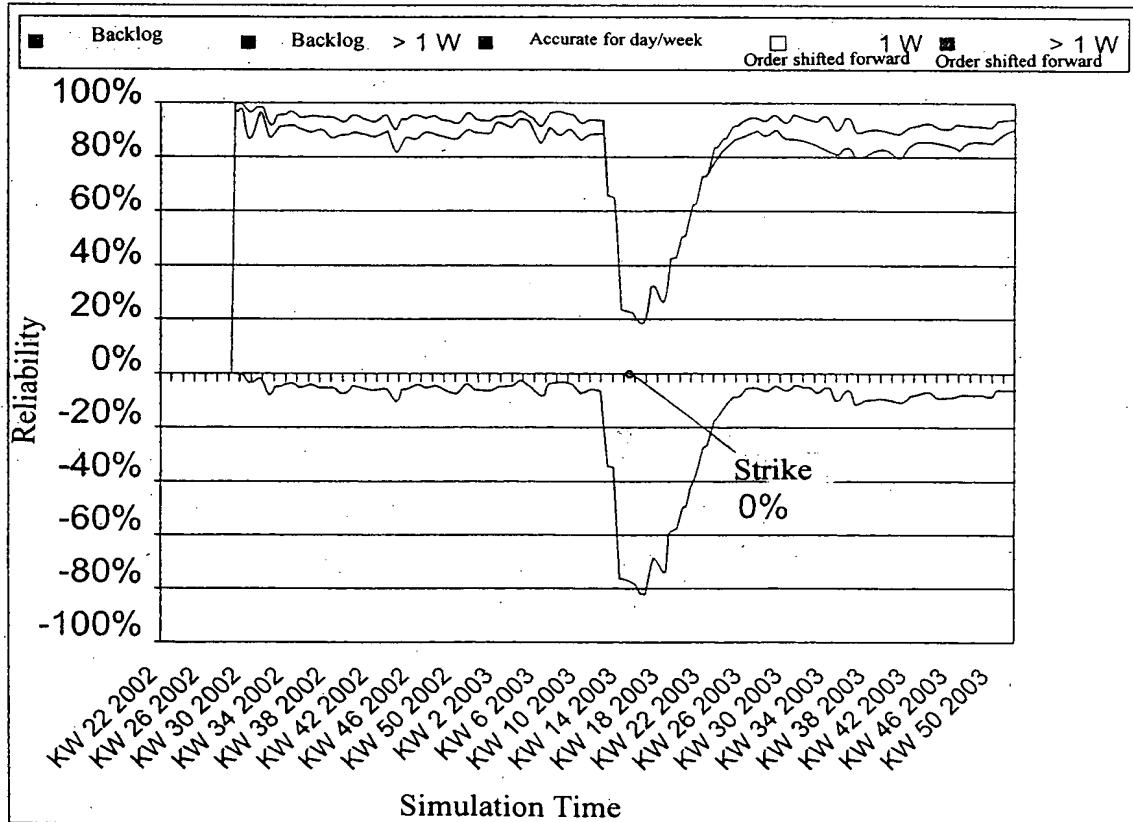


FIG. 45

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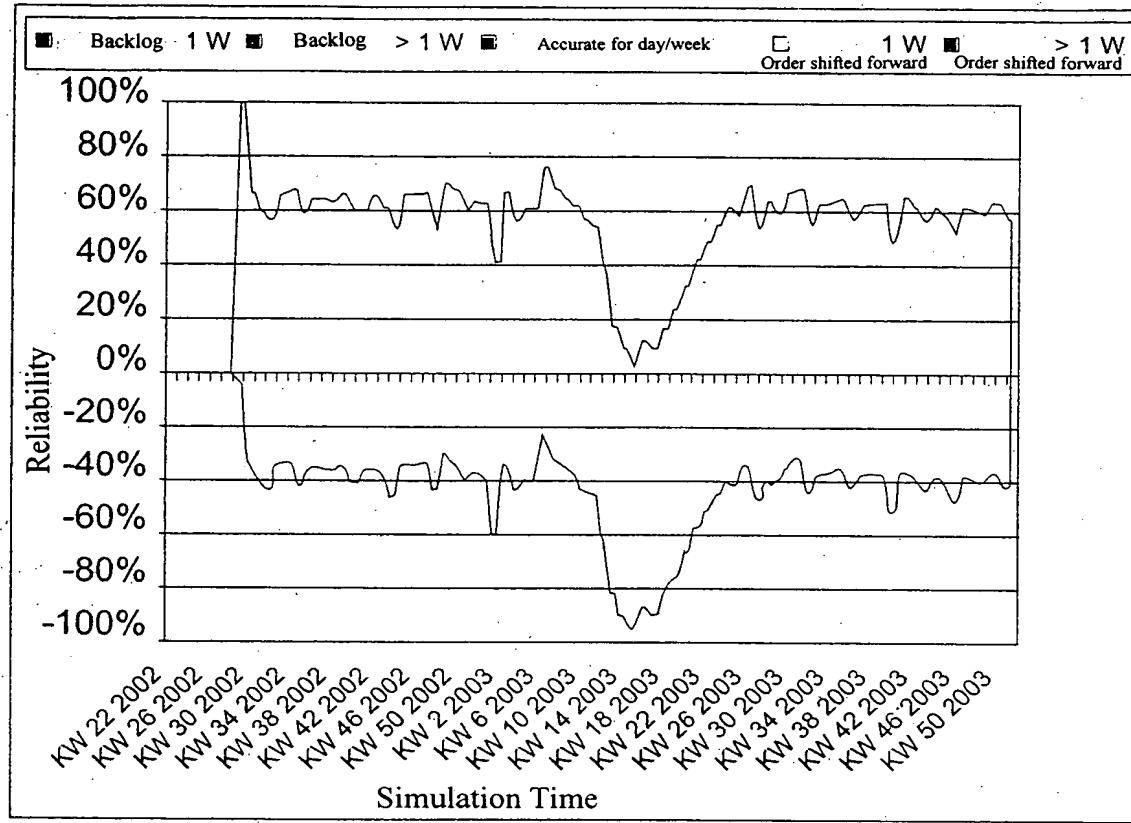


FIG. 46

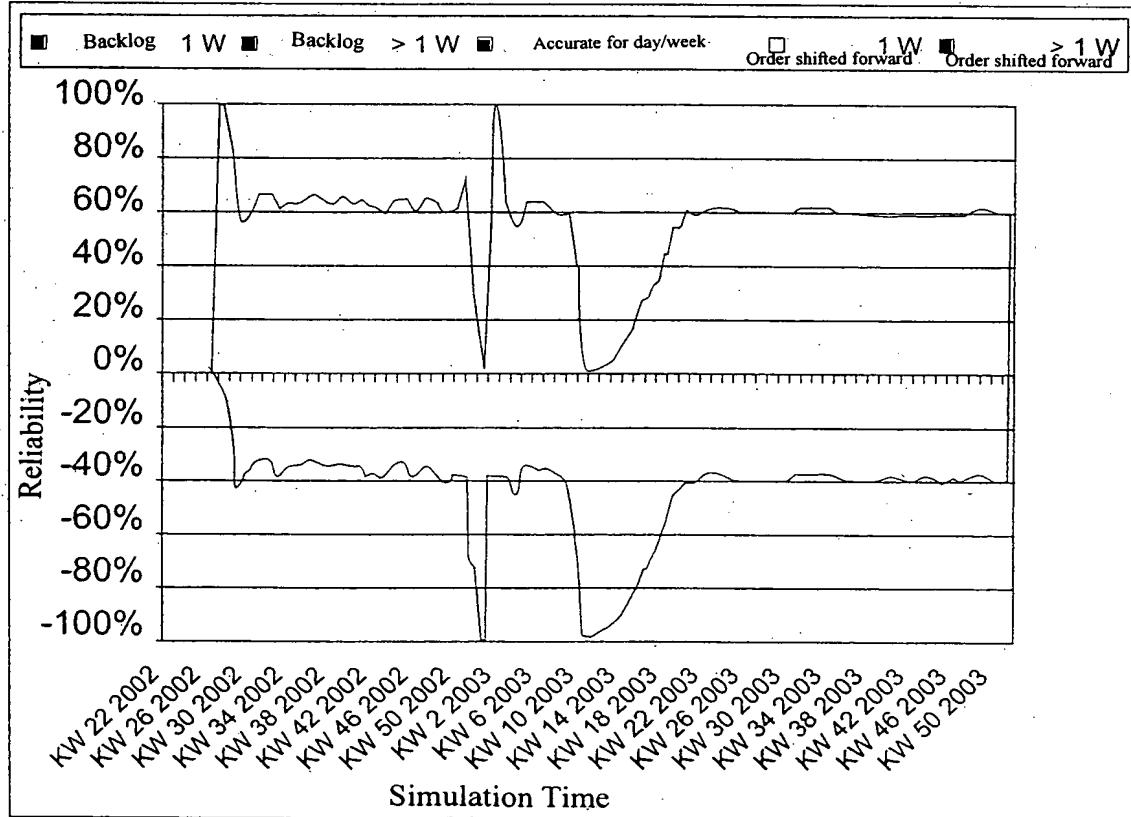


FIG. 47

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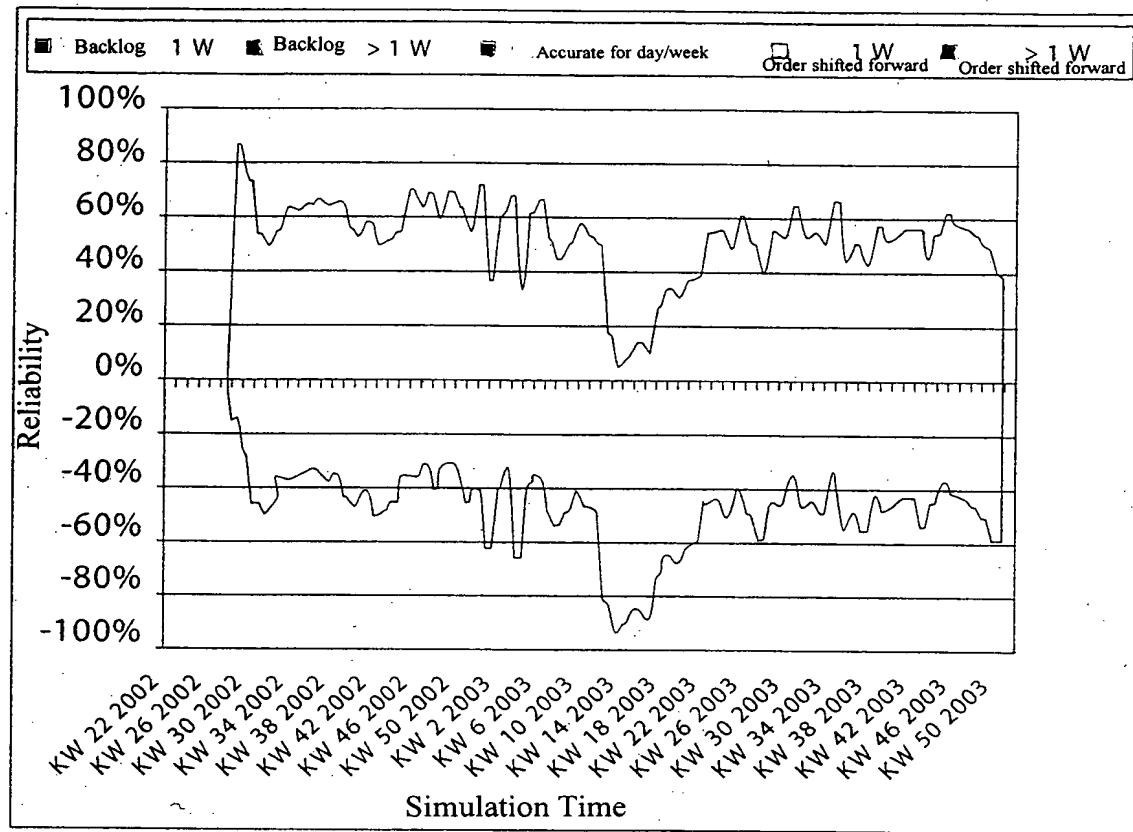


FIG. 48

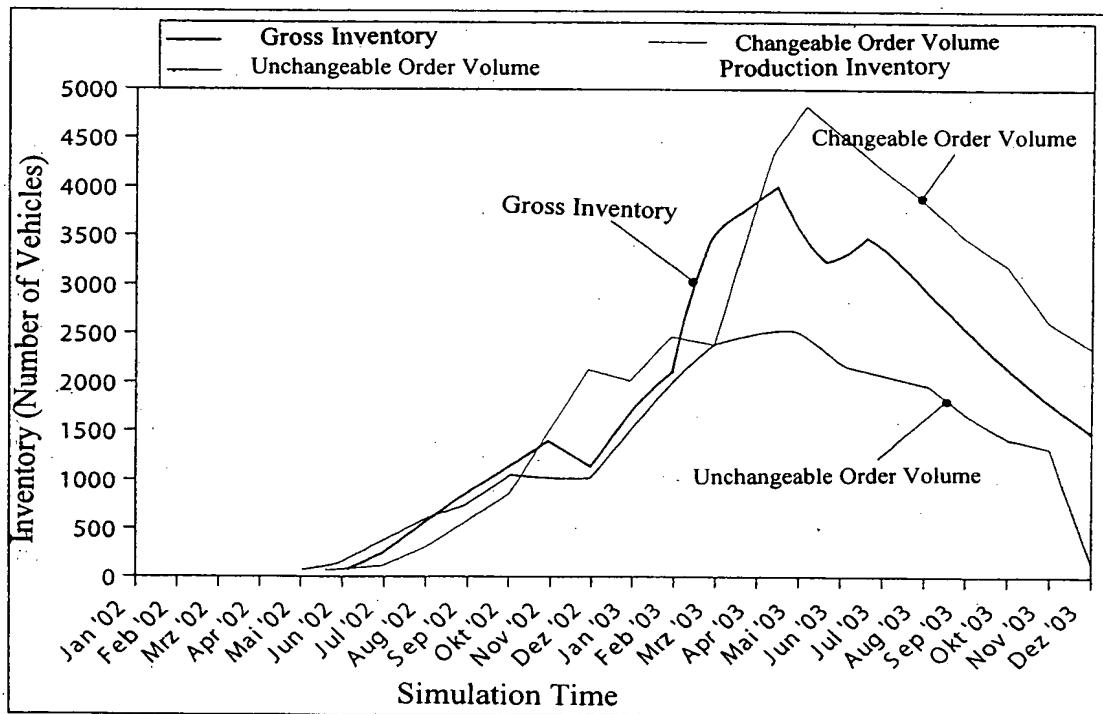


FIG. 49

Application No. : 10/519,510  
 Applicant(s) : Stephan Hase  
 Title : Method and Simulation System  
 for Simulating Order Processing  
 Processes...  
 Attorney Docket : 101215-175

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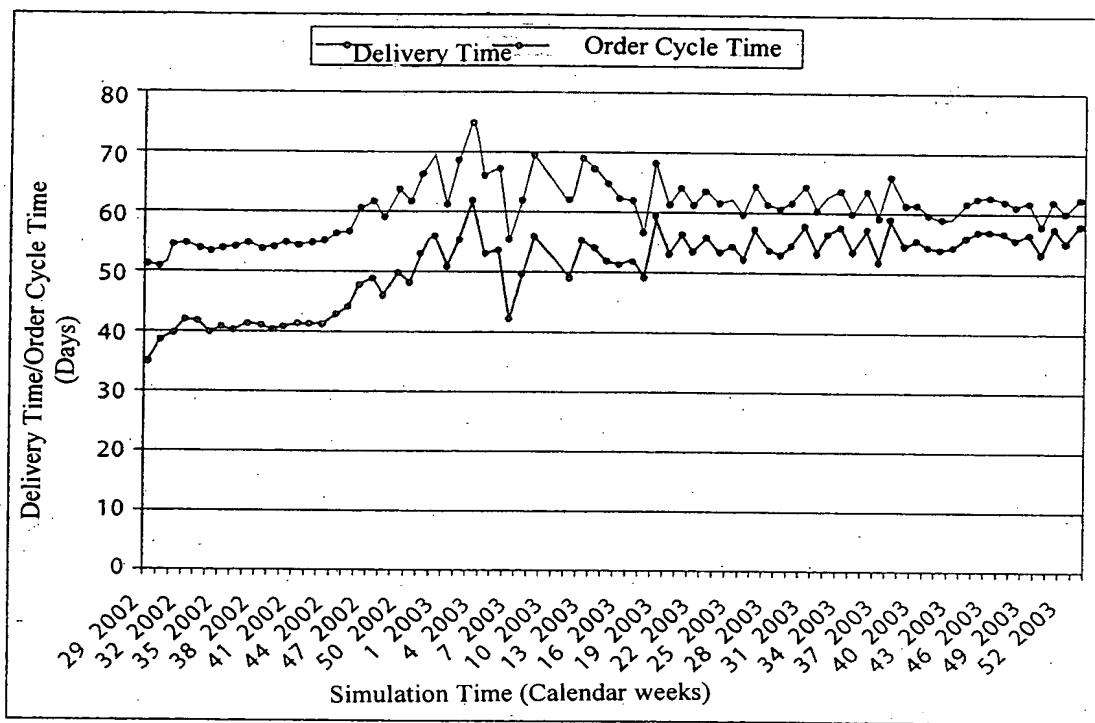


FIG. 50

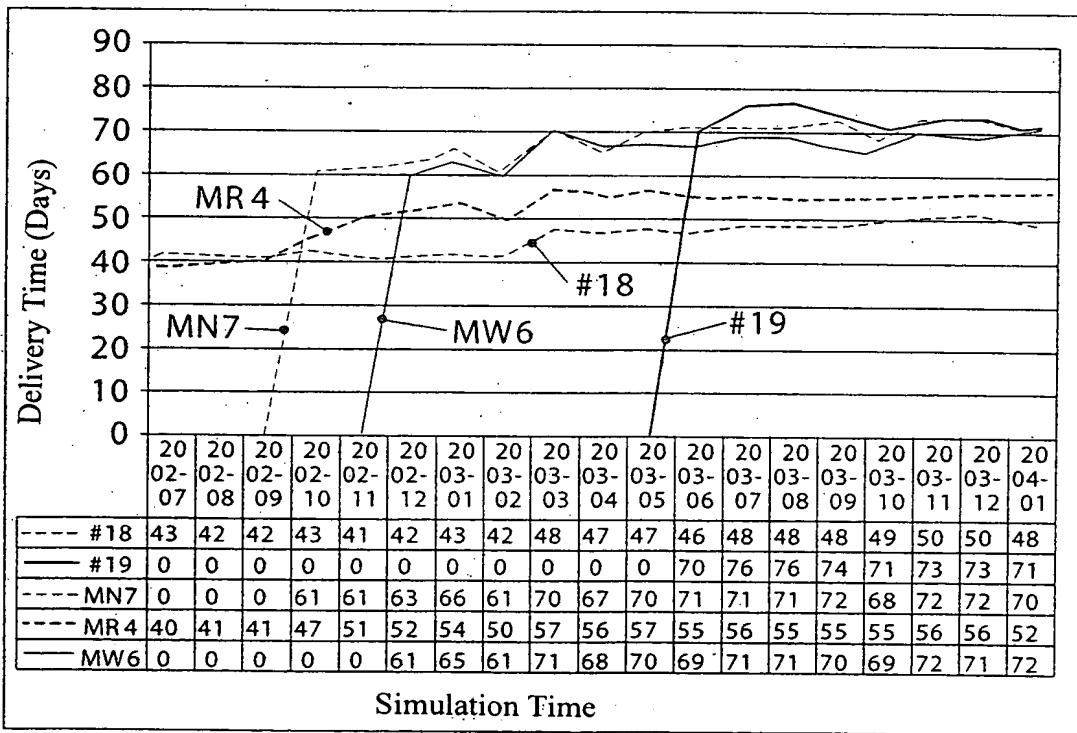


FIG. 51

Application No. : 10/519,510  
Applicant(s) : Stephan Hase  
Title : Method and Simulation System  
for Simulating Order Processing  
Processes...  
Attorney Docket : 101215-175

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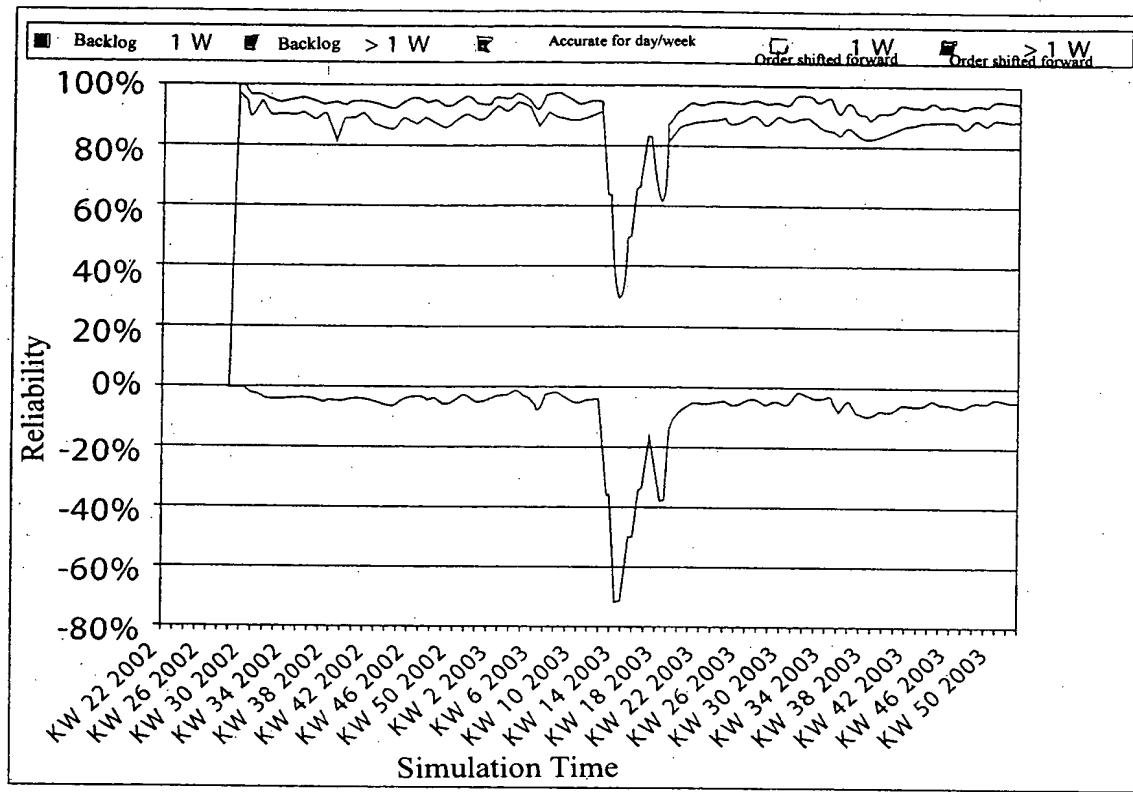


FIG. 52

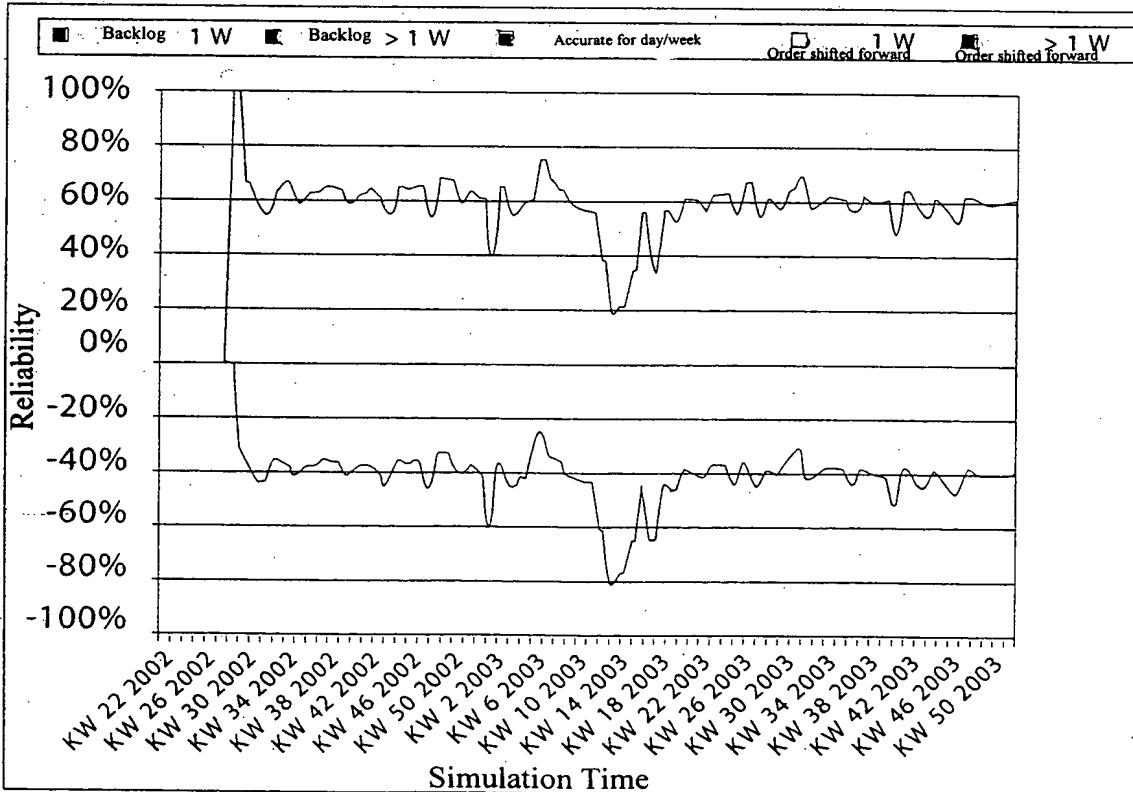


FIG. 53

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Application No.: 10/519,510  
 Applicant(s) : Stephan Hase  
 Title : Method and Simulation System  
 for Simulating Order Processing  
 Processes...  
 Attorney Docket: 101215-175

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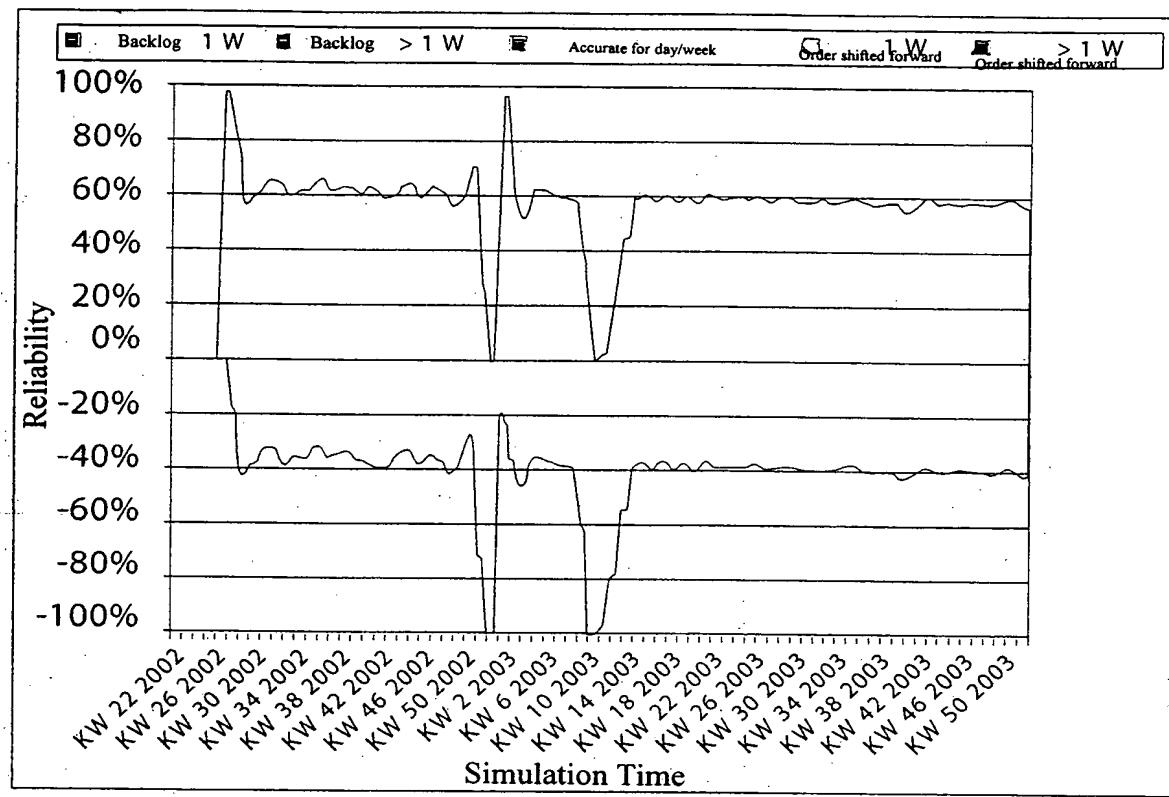


FIG. 54

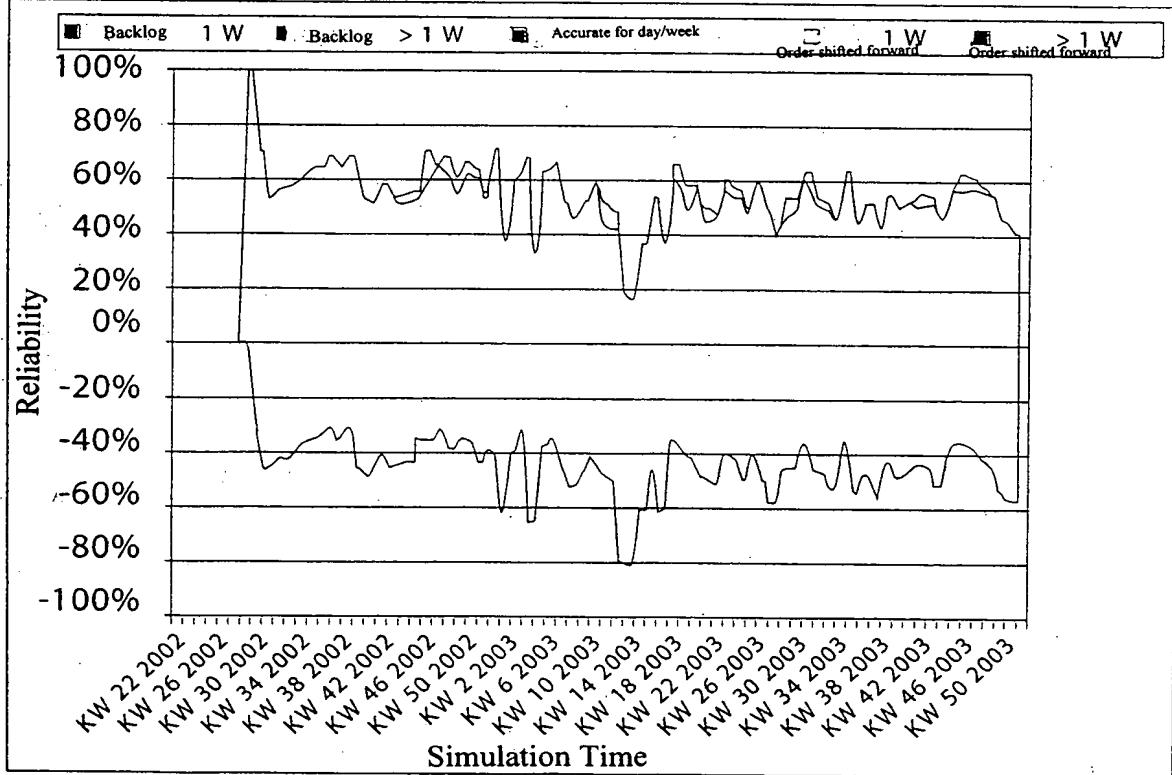


FIG. 55

Application No. : 10/519,510  
Applicant(s) : Stephan Hase  
Title : Method and Simulation System  
for Simulating Order Processing  
Processes...  
Attorney Docket : 101215-175

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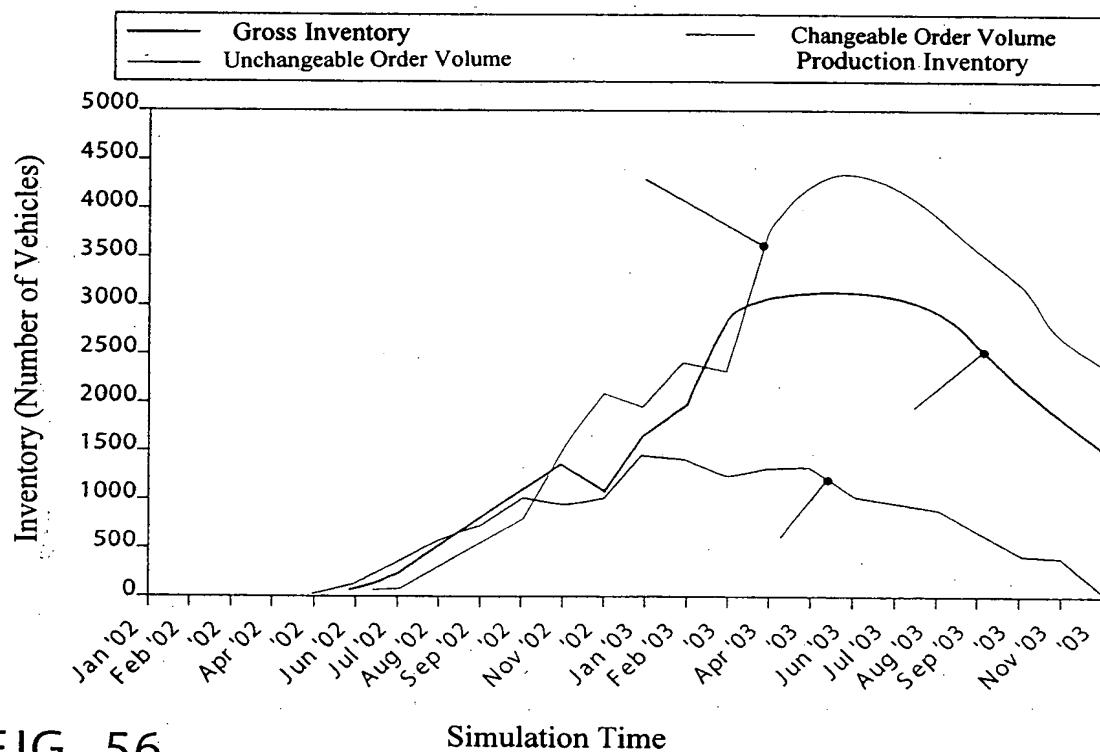


FIG. 56

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